HE CHEMIST AND DRUGGIST

OFFICE,
IAL BUILDINGS—44A CANNON STREET, LONDON, E.C.

culars of subscriptions, advertisements, &c., see the centre of the book.

THE MONTH

Pharmaceutical Council met on March 4. It was ecd that Professor Redwood had accepted the offer lately him to complete the Historical Sketch of Pharmacy nced by Mr. Jacob Bell. The President referred to the f Mr. Morson, which had occurred the day previously. ome remarks from Mr. Hills, Mr. Bottle, Mr. Sandford, . Williams (the last of whom had been in early life an t with Mr. Morson for ten years), it was resolved that Sandford and Williams should draw up a letter of hy and condolence. A letter from the Organisation tee of the International Pharmaceutical Congress, to be St. Petersburg next August, was considered. It had onsidered by a committee, which recommended that a ntative, or representatives, should be sent to the congress, d by the Pharmaceutical Society. Mr. Hampson and eenish supported the recommendation warmly, on the that Great Britain ought to be represented; but Mr. t and Mr. Sandford questioned the advisability of spend- money for the problematical good which might result. tely the question was left over for further consideration. icitor produced a case and opinion on certain points of lulteration Act, which had been submitted to the late ey-General and counsel. It was decided not to publish cument, but to leave it open at the discretion of the secre- nd solicitor for the use of chemists and druggists ned with proceedings under this Act. On the motion of mpson, it was further resolved that the Parliamentary ttee should be requested to consider the objectionable of the Adulteration Act as affecting chemists and drug- nd take steps to represent such to the Government and e necessity of their amendment. Mr. Sutton mentioned of a veterinary surgeon having sold a vermin killer with- ering the sale. He asked what steps could be taken in tter. The Solicitor said the society could proceed against ller for infringing the Registration clause, but the police proceed for selling the poison without conforming to the regulations. The "additional scholarship" committee d that they wanted more definite information as to the 's income before they could come to a conclusion. The s for preliminary examinations were appointed. Mr. son advocated the opening of the museum in the evenings Saturday afternoons, and his suggestion was referred to brary and Museum Committee. The North British Branch d having taken new and more convenient premises at 119 Street, Edinburgh, at an annual rental of 75*l*.

obituary this month is unusually heavy. In the sad list e found the name of Mr. George Meggeson, aged 90. Per- o might be called the patriarch of the trade. Regularly year he paid us a visit, for, as he used to say, though he tired from the trade, he always "liked to see how things oing on." We had come to look for his annual word of agement, and shall miss his kind face for many years. ve lost, too, for ever the occasional calls of our esteemed Mr. Morson and Mr. Routledge. Our American correspondent sends us an interesting sketch of the late universally known Professor William Proctor, jun., of Philadelphia, who has also joined the majority.

The French Budget Commission has proposed to raise the license of pharmaciens from third-class to second-class rates, an increase which would average about 40 per cent. The pharmaciens are quite willing to bear their fair share of the necessarily heavy taxation of their country, but they feel that in this matter they are treated with exceptional hardship. They state that their average turnover does not exceed 400*l*. per annum.

The movement which German pharmacy is slowly but surely making towards a freer system of trade than at present prevails may be read between the lines of our Berlin correspondent's *résumé* of Professor Phœbus' recently published brochure, that learned gentleman's views to the coutrary notwithstanding.

If logic can be relied upon, an important Austrian official, councillor Hlasiwetz, has assuredly demonstrated that the pharmaceutist's occupation is nearly gone. He traces all the ruin to the triumphs of "elegant pharmacy." His lecture, reported by our Vienna correspondent, is worth reading.

The ballot on the question of appropriating the profits of the Civil Service Supply Association to the benefit of the shareholders resulted in the decision to adopt the proposal. Another result was the retirement of the chairman and five others from the Board of Directors, and the withdrawal of a large number of the ticket holders.

The ingenuity of analytical chemists in discovering in a mixture exactly the substance they seek is the dangerous reef which they should carefully avoid. Mr. Moss, in conducting our "Corner for Students," has judged wisely in checking this tendency in the budding analysts who are among the competitors. The catalogue of poisons found in a simple mixture of flour and linseed meal is very amusing, but the lesson is not more salutary to those who have made the errors than it is instructive to all of us.

Professor Bedford, of New York, having examined his own students in the College of Pharmacy there, sends over the questions, and offers a prize to British apprentices, assistants, and students, for the best set of replies forwarded to us. We hope this indication of the Professor's kindly interest will be so far appreciated as to ensure a creditable competition. Particulars will be found on a subsequent page.

The "Supplement to the Pharmacopœia" was confidently expected this week, but up to the time of our going to press it has not appeared.

An inquest was held at Guildford, on the 9th instant, on the bodies of several members of a family named Coombes, who, it was stated, had been poisoned by using water from a bucket which had once contained a sheep-dressing composition. The father and two little girls were dead, and the three remaining members of the family were dangerously ill. The inquiry was adjourned.

The influence of the trading classes was never so apparent in any previous election as at the recent one. In the large boroughs especially this was manifest, and candidates often found it necessary to give forth no uncertain sound respecting Civil Service Stores and the injustices of the Adulteration Act. With regard to the latter grievance, a dispute has arisen between two eminent analysts, Professor Redwood and Professor Wanklyn, who have come to directly opposite conclusions as to the presence or absence of alum in a certain sample of bread. These contradictory results have caused much notice, as is evidenced by the fact that the *Times* has discovered that "the Adulteration of Food Act, notwithstanding the soundness of the principles on which it rests, may be so worked as to become a source of grievous injury to innocent persons." It would be curious to know what is the exact meaning of that contradictory sentence, and it will be also interesting to observe whether the *Times* and the Government will help to remove this "source of grievous injury to innocent persons."

A correspondent, "Justitia," reiterates a desire that is widely felt, and that we have often expressed. He would like the Pharmacy Act brought to bear on the Co-operative Stores, so as to test the question whether their flimsy device for evading it will be found legally secure. It is to be hoped that the new conditions of the Civil Service Stores will tempt the Pharmaceutical Council to an encounter which has been already too long delayed.

EXAMINATIONS.

WORDS of wisdom were spoken by Bishop Temple when addressing the successful students of the College of Preceptors. The speech will be fresh in the recollection of us all, and need not be repeated here. On one point we are agreed in common, whatever may be otherwise our diverse opinions—that a sound basis is essential to any system deserving the name of education; and that when we build a tower we must not only count the cost, but see to the depth of its foundation. We need not linger over these generalities, but come direct to the consideration of an anomalous state of things existing among ourselves, some of which are more than difficult to explain. Never up to this moment has such eagerness been evinced on the part of pharmacists to rise superior to the mere necessities of the requirements of their position. A compulsory examination has stimulated this disposition, but in itself it is the birth of the age in which we live, and pharmacy but shares the universal struggle for improvement. Examination is a test of knowledge gained—there rests the abstract principle. But it is also the passport to a life position; therefore it is higher than a prize, and of far more value to the gainer. Position, based on qualification, is another word for money—this is the crucial difficulty of the question. Knowledge is power—so said Lord Bacon: a truth of which our later days have afforded such splendid illustrations—and knowledge also adds a title to a man's name, a material advantage which is accepted by the most prosaic intelligence as a sort of investment in the funds. At once, then, we arrive at an explanation "of things that be:" it is not for us sentimentally to bewail events, still less to palliate their existence. Wiser is it to understand their origin, and seek *rerum cognoscere causas.*

We lament that an age of competition has of necessity induced an age of the superficial. We are far, however, from indulging in too prolonged Jeremiads; nor do we join in the forboding that scholarship is likely to die out in the present generation. From time immemorial certain men have devoted themselves heartily to science—their whole lives have been a long devotion to the loving contemplation of truth in its various forms. The exact sciences have had their splendid list of votaries, while technical studies have claimed from others unswerving application. To this class of student the term examination conveys no other idea than that of a welcome test by which his acquirements may be gauged. There are more scholars in our midst than ever, though we are apt by their very number to under-rate their conspicuous abilities. This difference may be noted, that then there was a strong light, and the surrounding world in darkness—now the darkness is lessened marvellously, and the light is more diffused. While, therefore, with regard to high scholarships we entertain no shadow of anxiety, we direct attention to the special complication which the pursuit of pharmacy involves.

Our occupation is a trade, by the exercise of which we have to meet the rent and pay the taxes. It includes a science with which it is of paramount importance to be acquainted, and ignorance of which is now officially forbidden. We cannot insist too strongly, nor explain too fully the extent to which the science may be made the helpmate of the trade. When once the position is appreciated we shall have few superficial scholars in our ranks. Short of dexterity in the art of practical analysis, no youthful beginner should rest satisfied, if he hope hereafter to attain a moderate share of advancement. This should constitute a reason against viewing an examination as but a means of accomplishing a certain object.

But another subject demands attentive consideration. Our regular mode of conducting pharmaceutical education seems to be singularly unsuccessful in fitting the student for that ordeal which he awaits with trembling expectation. Does the fault lie in the application of the test, or in the mode of preparation?

Bishop Temple lays it down as a golden axiom that the examination should follow the school, and that the school should not adapt its teaching to the requirements of the examination. We go further, and say that the examiner should constitute himself an abstract and impartial individual, and should require from such as come before his notice such evidence of knowledg in his special subject as the law has pronounced obligatory, and deemed sufficient. He should be supremely indifferent as to th sources from which the learner has gleaned his information, and should be honestly satisfied when proof is afforded that th standard has been reached. There is a fear lest the dread o special, and therefore superficial training, may tempt the examiner to stray from the broad principles of the department i his charge, and that he may descend to the invention of abstrus questions and purely technical details. The examination the merges into a drawn battle between cramming on both sides— catastrophe which falls the heaviest on the conscientious student and the lightest on such as are endowed with full assurance an a fair amount of sharpness.

We offer our unqualified respect to the remarks lately mad by Mr. Tuson. He suggests that professors of purely scientifi reputation should share the labours of those who are personall engaged in the art of pharmacy. We cordially welcome th proposition, being under the impression that its adoption woul be a manifest improvement.

Professional aid would work well and harmoniously with th constitution of the Board. We imagine such a plan would b open to no objection on the part of those who at present so admirably conduct affairs, and it would inspire even greater conf dence amongst the candidates. When the new regulations com in force the standard of our examinations will be raised. Mor of the practical will be introduced, and the student's curriculu will be extended.

From the date of this alteration not the cleverest hasty trai ing will suffice—those wonderful gentlemen who produce a fu blown chemist with the rapidity of the wizard's flowers wi find their occupation gone, and schools of intrinsic excellenc will rise.

Signs are not wanting to confirm the omen.

VELOCITY OF NERVOUS IMPULSES.

IN his suggestive lecture on the sun, our English visitor, M R. A. Proctor, makes use of several striking illustrations give an idea of the immense distance between us and our gre luminary. One of these supposes an infant with an arm of t inconvenient length of ninety-one millions of miles, who shou stretch forth his hand and touch the sun. Naturally the darli would have his finger burnt; but, so slow is the transmissi of feeling, he would have to wait until he was a hundred a thirty-five years old before he could be conscious of the fact. this estimate Mr. Proctor evidently adopts the rate of ner motion obtained some twenty years ago by the observations Dr. Hirsch—that is, about one hundred and eleven feet second. The later and more elaborate researches of Dr. Schles show a rapidity of conduction by the sensory nerves of abo ninety-seven feet a second, which would require our sunbur infant to wait some years longer before discovering his indiscr tion. If he trusted his sight in the matter, he might beco aware of the danger of his distant member in the short space eight minutes, so much more rapid is the speed of light than t movement of feeling along the nerves. The passage of voliti along the motor nerves appears to be still slower; so that u wards of a century and a half, perhaps, might elapse before t mental order to withdraw the finger could be carried out.—*Scientific American.*

CONDUCTED BY RICHARD J. MOSS, F.C.S.

VE have the pleasure to announce another exercise in Toxicology. The substance to be examined shall consist of a xture of flour and linseed meal, and it may contain a wellown metallic poison.

The mixture is to be subjected to such an examination as is quired to detect the suspected poison.

Students who wish to compete should send us their names and ldresses before the 20th inst. On the 25th we shall forward the mples.

Students' papers will be received up to the 15th of the llowing mouth.

ANSWERS.

The organic mixture distributed for analysis in January consted of flour and linseed meal, and did not contain a wellown metallic poison. Many of our contributors, when they ad this announcement, will probably think that they have en unfairly treated; for they do not appear to have been at l prepared for such a result. It is only necessary, however, refer to the announcement of the exercise, where it may be en that on that, as well as on previous occasions, we stated at the mixture "*may* contain a well-known metallic poison." e had observed that those who did not detect the real poison previous exercises generally managed to find some other ıbstance which answered their purpose just as well, so we very aturally thought that instructive results would be obtained by istributing a mixture quite free from any impurity. The result as been rather curious. Imagine this to have been a criminal case. Vhat would be the feelings of the unfortunate prisoner who found imself accused by two chemists of having administered poison in he form of barium borate. Another finds that—regardless of exense—he has resorted to silver chloride. A third can show that ıe poison was ferric sulphate; while four other analysts prove espectively that the poisonous salt was zinc sulphate, zinc carenate, chromium and potassium sulphate, aluminium and potasum sulphate. But this is not all, for there is one chemist repared to demonstrate that no such uncommon substances as ıese were employed, but simply the "well-known metallic oison" ammonium succinate, or, in other words, ammonium thylenedicarboxylate. What punishment is sufficient for the riminal who could torture his victim, and challenge modern hemistry, by resorting to the use of such a well-known metallic oison? Finally, imagine the despair of the chemists, and the ndignation of the public, when it is discovered that all these nysterious poisons were manufactured out of a mixture of pure inseed meal and wheaten flour. Let us not despair, however, or the difficulties to be overcome in the examination of a mixure, apparently so simple, are quite sufficient to test the owers of an experienced chemist. We hope, therefore, that no ne will be disappointed; but that, on the contrary, those who ave been unsuccessful will be determined to utilise the exerience which can convert failure in the past into future uccess.

The presence of a small quantity of iron and of calcium hosphate in the mixture helps to explain some of the errors. These are normal constituents of the organic matter, as any f our correspondents can easily ascertain for themselves, by gniting a similar mixture, so as to destroy the organic matter, and then heating the residual ash with dilute hydrochloric acid. The solution thus obtained may be examined by the ordinary nethods, bearing in mind the presence of phosphates which will be precipitated when the acid of the solution is neutralised. Those who use "Attfield's Chemistry" will find a plan suitable for the examination of this solution described in the chapter on the analysis of salts. The mixture contained equal parts of flour and linseed meal, materials which can easily be obtained in quantity. We strongly recommend our correspondents to analyse a similar mixture, with a view to the detection of those substances to which we have referred, and also of less important constituents, such as compounds of aluminium, magnesium, sodium and potassium.

PRIZES.

The First Prize for the best analysis of the mixture has been awarded to

ARTHUR WEDDELL, 45 High Street, Winchester.

The Second Prize has been awarded to

D. A. STEVENSON (D. A. S.).

Marks awarded for Analyses.

A. Weddell (*1st prize*)	75
D. A. S. (*2nd prize*)	70
C. W. H.	65
Nemo	0
W. A. B.	0
D. L.	0
Test Tube	0
B. O. W. L.	0
Non Nullus	0
H. W.	0
H. A. K.	0
Spero	0
E. F. T.	0

TO CORRESPONDENTS.

*** All Communications should include the names and addresses of the writers.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as a second prize.

A. Weddell.—You see you have succeeded much better than you expected. With care and attention, and above all, close adherence to facts, one cannot go far astray. The particulars which you gave were quite sufficient. For the sake of familiarity with the constitution of the reagents with which you have to deal, it is, perhaps, better to employ formulæ than names.

D. A. S.—The expression "no result," which you frequently use, is obviously incorrect if intended to refer to a negative result.

W. A. B.—You omitted to take into consideration the possible presence of phosphates.

D. L.—You must have observed that the substances which you detected were present in very small quantities; and we are surprised that it did not occur to you that they were normal constituents of the organic matter.

Test Tube.—You are perfectly right in concluding that barium borate is not a well-known metallic poison. You may see from the results of this analysis that it is very important to take the organic matter into consideration. You have no cause to be discouraged with your first attempt. If it is all the same to you, we should like to receive a neater and more legible account of your work in future.

B. O. W. L.—See remarks to *Test Tube* concerning barium borate. You may be able to account for the remarkable coincidence of results.

H. A. K.—Your errors proceed more from defects of observation than from ignorance. You must not allow yourself to be so influenced by one particular idea that the possibility of that idea being erroneous scarcely occurs to you. You will find that your best chance of arriving at truth in chemical research is by working in a sceptical spirit. Avoid conclusions until you are driven to them by weight of evidence.

Spero.—The reaction which you attributed to silver would be produced by albumenoid substances.

PHARMACY IN NEW YORK CITY.—There are in New York 466 proprietors of pharmacies, 269 of which are foreigners, 194 of these being Germans; of the 466, 62 are graduates in pharmacy, one-half of whom received their diplomas from foreign colleges, and 56 are graduates in medicine. There are 458 assistants, and of these, 206 are natives of the United States; 36 are graduates in pharmacy, and 16 in medicine. This shows a total of 924 proprietors and assistants, 521 of whom are foreigners, 98 graduates in pharmacy, and 72 in medicine.—*Tennessee Pharmacal Gazette.*

THE "BEDFORD" PHARMACY PRIZE.

WE have the pleasure to announce that Professor P. W. Bedford, Professor of Pharmacy in the College of Pharmacy of the City of New York, offers to British apprentices, assistants, or students, a copy of the new edition of Parrish's "Pharmacy" as a prize for the most correct replies to the questions printed below.

We may state that these questions are the same as were submitted to the Pharmacy Class of the above-named College at a recent examination. We hope to have a lively competition, and some papers of good quality, because we intend to send them all to Professor Bedford, that he may himself award the prize; and we should like him to see that Great Britain has still something left to hope for. We are sorry to lay this extra burden of adjudication on our esteemed friend, especially as he asks us to decide on the replies received; but we are sure he will excuse us when we point out that the competition will have a double interest if its results are submitted direct to him.

Competitors must attend to the following points, neglect of which will invalidate their compositions. They must use thin paper to write their replies on, and write as closely and neatly as is consistent with clearness. They must answer the questions according to number, and use as little superfluity of expression as possible. Papers must be sent to our office previous to April 5. The result of the competition will probably be reported in our issue for May 15 :—

Questions on Pharmacy.

1. A solid body weighing eight and one-half troy ounces, has a specific gravity of 1·97, how much water will it displace?

2. A liquid having a specific gravity of 1·340 measures thirteen fluid ounces, what will be its weight in troy and avoirdupois, and also in the metrical system?

3. What is the specific gravity and per centage strength of the officinal alcohols? Give also their officinal names.

4. You are directed to evaporate certain officinal preparations at the temperature of 140° F. What would be the corresponding degree of Centigrade?

5. Explain the process of percolation.

6. Mention the different officinal methods of obtaining, in a liquid form, the active virtues of vegetable drugs.

7. What is the difference between distillation and sublimation, and how do both differ from evaporation? Give officinal examples of each process.

8. What products are obtained by the destructive distillation of wood, and how is the acid purified for medicinal use?

9. What are the peculiarities which distinguish the following substances: Gums, gum resins, resins, oleo-resins and balsams? Name two examples of each class.

10. How is starch procured? How is it converted into sugar in the living plant—how by manufacture?

11. How is sugar converted into alcohol? Give a brief outline of the process.

12. What officinal ethers and ethereal bodies are prepared by the decomposition of alcohol? Give their names, medicinal uses, and doses.

13. How do we distinguish between volatile and fixed oils, and what are the general tests of purity for volatile oils?

14. What is the difference between a cerate and an ointment?

15. By what process is glycerine obtained, and what are the tests of purity?

16. How are the officinal resins prepared?

17. What distinguishes alkaloids from other bodies? How do they resemble alkalies, and in what do they differ?

18. What general processes are used to extract alkaloids? Mention ten alkaloids, and the source from which each is obtained, and give officinal names.

19. How are morphia and its salts distinguished from quinia and its salts?

20. By what process is iodide of potassium prepared? How is it tested for its purity, and what ready test distinguishes it from bromide of potassium?

21. In what officinal preparations is arsenic an ingredient? Name them. Give doses, and state how you would prepare the antidote for arsenic.

22. What compounds of iron and sulphuric acid are officinal? Give their names and compositions.

23. Of what officinal preparations is metallic mercury a constituent, and to what extent?

24. Are the following prescriptions correct, and how would you prepare No. 4 and No. 5?

No. 1. Rp. Cretæ precipitatæ ʒ j.
Pulvis Camphoræ gr. iij.
Pulvis opii ℈ j.
M ft. chart. No. X.
S. One powder every hour for the child.

No. 2. Rp. Ferri sulphatis ʒ j.
Aquae fl. ʒ vj.
Acidi nitrici, fl. ʒ j.
Strychnia ʒ j.
Ft. solutio. S. Dose, five drops in water.

No. 3. Rp. Sodæ boracis ℥ ss.
Syrupi tolut. fl. ʒ vj.
Mucilag. acaciæ q. s. ad fl. ℥ij.
M. S. 40 drops every half hour.

No. 4. Rp. Olei morrhuæ f. ℥iv.
Ft. emulsio q. s. fl. ℥xvj.

No. 5. Rp. Extracti Belladonæ ʒj.
Chloroformi fl. ʒj.
Camphoræ gr. xxx.
Unguenti ℥ j s.s.
Ft. unguentum.

HOW THE CAMPHOR TRADE IS CARRIED ON IN FORMOSA.

THE trees which produce this valuable article are not found within the district marked on maps of Formosa as Chinese territory. They occur only within the country of the aborigines, upon the immediate border. The manufacture of camphor necessitates the destruction of the trees, which are never replanted: as the country becomes denuded the aborigines recede, and the Chinese effect a corresponding encroachment. As a consequence the border-country is in a continual state of disturbance, and fearful outrages are committed by both sides on every opportunity. Consul Baber mentions that a naval officer who lately returned from an expedition into the interior relates that on entering the hut of one of the aborigines he was shown six Chinese queues hanging behind the door—the possession of a queue indicating the previous capture of a head—and in another place he passed a party who were feasting in honour of a newly-taken head. On the few occasions when they have been visited by foreigners the aborigines have shown a disposition to be friendly, but with the Chinese it is a veritable "war to the knife."

The system which has produced this state of things may be judged of by the following incident. A member of a local foreign house lately paid a visit to the camphor district near Sankohying, and on entering a hut belonging to one of the large dealers found two aborigines confined in the interior. He was informed, in answer to his inquiries, that the captives had been induced to meet a body of camphor dealers, with the object of coming to an agreement about the purchase of certain trees; and as they had refused to agree to the terms proposed by the Chinese, they had been plied with sam-shu, and then seized and bound. If they did not yield they would certainly be killed, but it was expected they would yield. This is a good example of Chinese views on the subject of "opening up a country." It is not generally known that the authority of the native officials is scarcely recognised by the Chinese in these districts. The emperor's "writ does not run on the border." One of that particularly obnoxious class of officials known as "lekiu" collectors lately ventured as far as the town of To-ko-ham, about six miles from the border, but was very shortly put to flight by the people of the place. No Chinese official would, of course, ever dream of venturing upon the debateable ground itself. A semblance of jurisdiction is, however, maintained in the border towns and villages by means of the "headman" system. Under these adverse circumstances the production of camphor succeeds in maintaining itself at about the same annual rate, without much progress or retrogression.

ATH OF PROFESSOR WILLIAM PROCTOR, JUN.

(FROM OUR AMERICAN CORRESPONDENT.)

ROFESSOR William Proctor, Jun., died suddenly at his residence in the City of Philadelphia, on February 10, disease of the heart. On the evening previous he had tured to his class at the College of Pharmacy, and on his urn home was in excellent spirits, and apparently in his usual lth. He retired about midnight, but shortly after expired hout a struggle or a groan. He had for several years fered at intervals from heart trouble, and was aware of his dition.

Professor Proctor was born in Baltimore, Maryland, in 1817; nce the family removed to Philadelphia, and at the age of 13 entered the drug business, serving seven years of apprentice-p, and for six years succeeding as clerk with Henry M. lickoffer.

He graduated from the College of Pharmacy in 1837, and in 3 he embarked in business at the corner of Ninth and Lombard eets, where he continued during his lifetime.

n 1846 he was elected Professor of Pharmacy in the college h which he was so long identified, and retained that position til 1866, when he resigned.

The sudden decease of the late Professor Edward Parrish, just ore the opening of the lecture session of 1872–73, created a cancy in the Professorship, and at the urgent solicitation of Board of Trustees he again entered upon the duties of that ir. He had expressed his intention of resigning at the close the present session, stating that he felt it due to his own alth.

In 1850 he was elected Editor of the *American Journal of armacy* (having for several years preceding been one of the blishing committee, and a frequent contributor, as also for a ar or two its co-editor), and until 1871 he filled that important ty.

No American pharmacist has left such a record of patient dustry, of valuable information, as our late friend. With eless energy, for over forty years he pursued his vocan with the enthusiasm of a student, and imparted freely e knowledge he had acquired, for the benefit of all in s profession. His contributions to the *American Journal of harmacy*, beginning with his thesis on "Lobelia Inflata," pubhed July 1837, to his last article, in April 1871, cover 860 ges, not including many editorial notices and other editorial ork.

In 1849 an American edition of Mohr and Redwood's *harmacy* was published, Professor Proctor editing it, and conibuting 250 pages of new matter.

If to this be added his contributions to the American Pharaceutical Association, not reprinted in the *American Journal f Pharmacy*, it will be seen that no writer in pharmaceutical terature of his land has done as much to advance the interests f the profession.

He was one of the originators of the American Pharmaceutical ssociation, and was in attendance at every annual meeting xcept that of 1867, when he was in attendance at the Interational Pharmaceutical Congress in Paris as a delegate, and was onoured by election as one of the vice-presidents. In 1862 he as elected President of the American Pharmaceutical Associaon, holding the office for one year.

He was the recipient of many honours from scientific organisaons, both at home and abroad.

As a pharmacist, Professor Proctor had no superior in his nd. Thoroughly conscientious, he made himself master of very detail of his business. In conversation he was plain and nassuming, and, save to his more intimate friends, of very rering manner, but always communicative to those who sought im for information.

From his early manhood he was connected with the Philadelphia College of Pharmacy, and served as one of the Board of Trustees uninterruptedly for 34 years. He was actively engaged upon the four last revisions of the U. S. Pharmacopœia, being a member of the committee from the college, as also a delegate to the convention at the meetings in 1840, 1850, 1860 and 1870.

As a lecturer, he was clear and eminently practical, and will long be admired by those who had the pleasure of listening to his instruction.

In 1867 he visited England and the Continent, and those who had the pleasure of meeting him will long remember his genial and attractive conversation and interesting manners.

Professor Proctor leaves a widow, son and daughter. His son, Wallace Proctor, graduated at the College of Pharmacy at the head of the class in 1872.

The remains of our late friend were deposited in the family plot in the cemetery at Mount Holly, N. J., on Friday, February 13, whither they were followed by a large number of friends.

HLASIWETZ ON MODERN PHARMACY.

(BY OUR VIENNA CORRESPONDENT.)

THE Hofrath Hlasiwetz has just recently created some sensation in pharmaceutical circles by the delivery of a lecture before the Lower Austrian *Gewerbeverein* on the pharmacy of the Vienna Exhibition. Attention has been more especially directed to this lecture on account of the position of the speaker. Formerly an *apotheker* himself, Hlasiwetz is now Professor of Chemistry in the Imperial Polytechnic School of Vienna, and also holds the office of consulting chemist to the Education Department. By no means agreeing with the pessimist views of the Professor, I may perhaps report, in a summary manner, the substance of his lecture.

He commenced his exposition by tracing the development of pharmacy into a scientific position. The chemistry of earlier times, especially from the fifteenth to the eighteenth century, was founded in the laboratories of the pharmaceutists; and many of the more important scientific researches of modern times owed their start to the same porch. Nowhere has chemistry had abler representatives than among the *apothekers*, and this community, too, has mainly supplied the chairs of chemistry in our schools and universities. The profession, too, could lay fair claim to many of the brilliant and useful contributions to science of recent times. But gradually and quite inexplicably an altogether different condition of pharmacy seems creeping upon us. In our times a special chemical industry has been rapidly progressing which must soon make all proficiency in science among retail pharmaceutists impossible. Formerly this proficiency was essential to success. But now the great chemical laboratories and factories have taken from the apothecaries every chance of equal competition, either as regards quality or price, and little remains to the latter except the application of chemical products to dispensing purposes. Their analytical skill is only used to test the preparations supplied to them, and not even the reagents themselves are prepared at home as they were formerly. Nay, the manufacturer will supply the very process for examination in case the retailer should be ignorant of it.

It is quite impossible for an apotheker to prepare the alkaloids, the organic acids, or the compound salts on anything like so cheap a scale as the manufacturer who produces them in bulk, and no doubt the patient is safer in taking morphia or quinine sent out from high-class chemical works than the corresponding products of a country pharmacy. All this is manifest and the causes are well known, but the effect on the pharmaceutical profession is not the less disastrous.

Of course our schools and universities still include experimental chemistry and natural history in their courses, but, with no opportunity of continuing it practically, the knowledge thus acquired soon becomes rusty.

Even pharmaceutical operations proper, as, for instance, salves, extracts, plasters, juices, essences, tinctures, and so forth, are now bought from pharmaceutical manufacturers. Neither does the apothecary any longer cultivate or collect his medicinal herbs. The wholesale druggist supplies him with these all ready cut, dried, powdered, and sifted; so that he may limit his whole activity to the length of his counter.

One result of this keen competition in the preparation of chemicals has been that prices are lower. The medicine tax is much reduced since the time when the pharmaceutist prepared his own materials. Besides this, the modern rational system of medicine has purged itself of the long and complicated recipes which formerly prevailed, and the natural consequence of all this is that the pharmaceutist's income has considerably diminished, and he must now enrich his stock with secret medicines, cosmetics, perfumery and confectionery, or perhaps, if circumstances are favourable, he will run some speciality, some syrup, or pill, or plaster.

The modern apothecary having degenerated into a mere dispenser at the best, what about the future? Already signs are threatening, or apparent, that the pharmacy of the future will develop into the production of medicines ready dosed and elegantly prepared. With this disappears the apothecary's last hope of employing his skill and knowledge. The physician is to be relieved from the necessity of prescribing so many grains of Dover's powder, quinine, or calomel, and will merely recommend his patient to buy a few dosed capsules or tablets. He will find all the chief formulæ of his dispensatorium provided in fitting envelopes, disguising smell and taste, and he will avoid the old repulsive form of decoctions, mixtures, and electuaries. He will discard the use of herbs and replace them with the essential principles only. His repertory of medicines will be like those of the homœopathist, ready prepared and ready dosed, and all proceeding from the chemical or pharmaceutical laboratory. With the consummation of this system the hour of the modern apothecary will have struck, and this prospect seems to be the future, or rather, the end of pharmacy, as far as can be foreseen at present.

PROFESSOR PHŒBUS ON PHARMACY.

(BY OUR BERLIN CORRESPONDENT.)

In your last number I referred briefly to the important essay of Professor Phœbus, of Giessen, "On the Present Condition of Pharmacy." As promised then, I shall now proceed more fully to summarise the learned gentleman's remarks.

The *brochure* is all the more important from the present point of view of German pharmacists, inasmuch as it presents not only a sketch of the development of the profession in other countries, but also draws a basis for new regulations of pharmacy for Germany, a subject now so generally debated. On this point the Government seems to be as much puzzled as the apothecaries themselves. Neither party seems prepared for free trade, nor desirous to maintain intact the present system. The system of "concessions" is generally admitted to be untenable, for it cannot be carried out without favour and partiality. The difficulty in abolishing these privileges, however, lies in the financial question. The Swedish Government has recently adopted a plan of gradually abolishing concessions, which Professor Phœbus recommends, and which it is not impossible may be imitated in Germany, to some extent at least, before very long.

In political matters generally the majority of the German apothecaries have been supporters of the Liberal party in the Imperial Parliament. But now it appears that it is the Conservative section which will maintain their interests, and which refuses to consent to the introduction of absolute free trade in pharmacy. Against our old enemies we have hitherto been able to defend ourselves, but shall we be equally able to protect ourselves in the future from our new friends?

In the introduction to his essay, Dr. Phœbus shows, *inter alia*, how protection in pharmacy has gradually developed out of originally perfectly free trade. Laws passed expressly for the benefit of the public have circumscribed the profession. Parallel cases may be found in the laws passed in Rome in 1790, and more recently in Hamburgh, occasioned by manifold mistakes and abuses.

Those most eager for change, Professor Phœbus shows, are those who know least of the present complicated conditions of pharmacy—reformers, who have a fixed pattern for modifying all institutions, and aspiring apothecaries, whose only desire is to become proprietors quickly.

It is quite certain that within recent decades medical practice and the dispensing of medicines has become simpler, and the latter has consequently become less lucrative. Formerly the average cost of a prescription in Germany was *at least* a shilling; now it is hardly more than sixpence. At this time, too, natural and artificial mineral waters are everywhere consumed entirely without the mediumship of the apothecary; people frequently make their own decoctions, collect their herbs themselves, and buy common drugs from the general shopkeeper. The increasing practice of taking secret medicines, too, has in some degree subtracted from the apothecary's profits. In former days some extra profit resulted from the collection of herbs and the preparation of chemicals; now the wholesale and manufacturing firms have taken this branch of business away, for apothecaries cannot compete with men who carry on these businesses on a large scale. The receipts of apothecaries are ridiculously small compared to other traders, and, added to this, it is useless for him to push his wares, for the reason that they are of such a nature that the demand cannot be extended. Again, the pharmacist is in an especial sense responsible to the public, to the physicians, to the supervising officials, and to his own conscience. *Errare humanum est* is a maxim interpreted in everybody's favour but his. His products must always be of the first quality, and even then a cruel fate decrees that they shall always be unattractive and even repulsive: out of his moderate profits he must allow discounts to charitable associations, and must be always prepared for night service without any extra remuneration.

Your "own correspondent" is not exactly a supporter of things as they are. and having observed on the spot the conditions of pharmacy in England, France, Spain, Italy, Roumania and the East, as well as in German speaking lands, has learne to appreciate the excellencies of other systems, though not blin to their defects. But he cannot fully agree with all the propo sitions of Dr. Phœbus. The Professor demands that th authorised charges for medicines should be higher, and tha greater honour and authority should be conferred on the apothecary. Excellent in theory, and every member of the professio must be grateful to the author for his good wishes. But th animosity against the present prices in Germany is so bitte that the tendency must certainly be to reduce them, and thi can only be done by reducing the value of the present conce sions. As to "honour," that is a patent which the State cann confer, but can always be gained by the individual. Certainl the apothecaries' authority is small enough; but physicians, the one hand, and the Legislature on the other, will be hardl likely to give them more than they now possess, an advisin rather than a decreasing power.

The fact is that German apothekers have themselves injur their case by their readiness to sell the concessions which, principle, have only been lent to them. They have thus creat a money value out of an abstract privilege. It is to be r gretted, too, that there are in Germany too many who practices approach too nearly those of countries where free tra reigns.

There is a demand for more "apothekers." It is said th many of those existing are too large, and have too ma employés to be properly superintended by one man. But t idea is almost too worthless to need reply. A town, say wi three good apothekers, each employing three assistants, surely better furnished than if it had nine struggling apot caries in it. Medicines will be dispensed better and quicker such establishments, and the principal can supervise th assistants as easily as one. This from a public point of vie looking from within, we can but pity the unhappy lot of t poor proprietor compelled to do everything himself, a lot a sha worse than that of a prisoner in a solitary cell. On this ve account M. Dorvault has urged a limitation of pharmacies France.

As the basis of any pharmaceutical code, Dr. Phœbus wou stipulate for: 1. State examinations; 2. Government regu tions for carrying on business; 3. Inspection; 4. A higher r of charges; 5. That the apothecary's position as a servant of State should be more regarded; and, 6. Strict limitation of t number of pharmacies in accordance with population or spec requirements. Finally, he considers when and under what co ditions new "apothekes" should be established, and to wh sort of applicants concessions should be granted. The fi question he would dispose of by statistical ratio, allowing variations in the consumption of medicine in certain distric and he answers the second question somewhat vaguely by say that he would give the new concessions to "the fittest."

ncludes by expressing an assurance of faith in the wisdom of e Imperial legislature, from which he expects a circumspect, storical, and statistical consideration of the conditions of armacy, and ultimately a new basis for its management, intro-cing for it a new era which shall be distinguished for a more st appreciation of its merits and an expansion of its benefits in e direction of honour, authority and pecuniary profit.

FRANCE.

THE PHARMACEUTICAL SCHOOL OF PARIS.

PARIS, March 1874.

A FEW interesting historical facts are given in the French *Journal Officiel* respecting the foundation and history of e Superior School of Pharmacy of Paris. This institution, it ems, dates back to the days of Henri III., "Henry of Valois," he is known in history. A rich citizen of Paris, a grocer med Nicholas Houel, was anxious to do something for his y and for future generations, and he conceived the idea of aintaining a number of orphan children and instructing em in the art of the apothecary, with the ultimate intention enabling them to minister to the medical wants of the poor. his ingenious and merciful idea was approved of by the King, d the enterprise was commenced in the year 1576. In 79 an old abandoned hospital was granted to the charity, hich transferred its quarters there, and bore the title of *aison de la Charitè Chrétienne.* Some land surrounded the ilding, which was planted with trees, and within the enclore Nicholas Houel planted a botanic garden, the first which d been known in France, and which was modelled after that Padua. The good grocer died in 1587, and his work arcely seems to have become sufficiently rooted to be able to intain itself, for nine years later Henri of Navarre, who had cceeded his cousin of Valois, took possession of the building d used it as a hospital for soldiers of all ranks wounded in s service. This was the first germ of the Hotel des Invalides. Louis Treize transferred these *invalides* to the Château de cêtre, and handed over the "House of Christian Charity" to me nuns of the Order of St. Lazare. These, however, do not em to have held it long, but transferred it to the Archbishop Paris, who in his turn made it an appanage of the great spital, the Hôtel Dieu. Soon, however, the Corporation of pothecaries began to investigate matters, and in 1625 they tained a Parliamentary decree which gave them the proprietry, and brought back the house to its original objects. In 29 they built a large house, which to a great extent is that ich still stands.

The establishment then became known as the *Jardin des othecaires.* In 1777, by royal decree, this title was changed that of *Collége de Pharmacie,* while the Directory, by a cree of the 3rd Floréal, year IV. of the Revolution, altered name again to École Gratuite de Pharmacie. Lastly, in the ar XI. of the Revolution, three schools of pharmacy were tablished for France, at Paris, Montpelier, and Nancy. ese are known as the Écoles Superieures de Pharmacie, and nce 1841 they have been affiliated to the University *régime,* d are consequently identical in their conditions.

There are also in France twenty-one preparatory schools of armacy, in connection with the twenty-one schools of medicine.

The Superior School of Pharmacy in Paris is now very old, d the building is somewhat shaky. It has been decided to move to a more central position on some vacant land between e Luxembourg and the Observatory. The present establishent is not nearly large enough to supply the necessary inruction conveniently to the large number of pupils which tend the courses. At the institution there are now some 500 udents. The school contains two lecture theatres, but the rgest will only seat 280. There are five small laboratories d one large one, which provide places in all for 150 to work the same time. Manifestly this want of room must conlerably hinder the work of teaching. There are, besides the oms we have named, very good museums, a library, and the amination room, adorned with paintings of all the past prosors of the school. Nine professors and eight "agrégés" mpose the teaching staff of the school. It will be seen that e business of the institution is conducted with remarkable economy when we add that the entire *personnel,* including the 17 gentlemen just named, and every employé, from the secretary to the concierge, numbers only 35. This number, it should be remembered, also includes the gardener and his assistant. The lecture and examination fees which are required of a first-class pharmacien amount to 1,390 francs; a second-class pharmacien may get through his course for 660 francs. It may be interesting to quote the titles of the professorial chairs. They are as follows:—(1) Botanique; (2) Chimie organique; (3) Chimie inorganique; (4) Matière médicale; (5) Pharmacie chimique; (6) Pharmacie galénique; (7) Physique; (8) Zoologie; (9) Histoire naturelle des médicaments. The final detail relates to the financial condition of the school. The figures given are those of 1872. In that year the gross receipts amounted to the handsome figure of 238,790 francs (9,550*l.*), against which the total expenses were 174,875 francs 76 centimes, showing a net profit of 63,914 francs 24 centimes, equal to about 2,500*l.* sterling.

⁂

The Budget Commission proposes an honour to the French pharmaciens which the latter would modestly decline. You are aware, probably, that all businesses in France pay an annual *patente,* or license, to Government. They are divided into classes, according to the reputed condition of the business. The Commission proposes to transfer pharmaciens from the third to the second class—that is, to place them on the level generally occupied by wholesale firms. The difference of the tax thus regulated would be an addition of from 30 to 50 per cent., varying according to the population of the place where the business is situated. Thus, in a town of 2,000 inhabitants, or less, the present tax is 18 francs per annum for businesses of the third class. For businesses of the second class it is 25 francs. This is the lowest end of the scale. Passing over the six intermediate steps we arrive at the highest rates, which are for towns of over 100,000 inhabitants. In these the license for the two classes is 100 francs and 150 francs respectively. The Société de Prévoyance des Pharmaciens de la Seine has issued a moderately worded protest against this somewhat unfair selection. The circular shows that pharmaciens already bear their full share of the augmented taxation of the country, and that in the case of certain articles, for example, sugar and alcohol, largely employed by them, the new taxes fall somewhat specially on them, as it is not in their power to raise the prices of their products in such a manner as to meet this increase, as a simple retailer can. They calculate, too, that the proposed augmentation would only bring in an extra 6,000*l.* or so to the revenue, while it would in multitudes of cases press very heavily on the profession. They state that the average turnover of the 5,575 pharmaciens of France does not exceed 10,000 francs (400*l.*) per annum, a statement which will satisfy English druggists that the pharmaceutical land of Goshen is not situated between the Channel and the Pyrenees. The circular suggests that the amount of the license might be more fairly regulated by basing it on the number of assistants employed.

A FISH OIL is said to be used in Scinde in place of cod liver oil, extracted from the livers of sharks and other sea fishes. It is stated that three times as much oil is obtained from the livers of these fish if they are taken about October or November than those caught at any other period of the year.

THE popular ideas of chemistry were well illustrated by the difficulties the committee of the Tennessee College of Pharmacy had in securing suitable rooms for the analytical department. When, after trying several months, they at last obtained rooms over an undertaking establishment, it was with the understanding that if any of the students got "blowed up," they were to become patrons of the establishment below.—*Tennessee Pharmacal Gazette.*

MARINE GLUE.—This is made by dissolving 1 lb. caoutchouc, cut into small pieces by means of a wet knife, in 4 gallons of wood naphtha. The solution of the gum should be aided by frequent stirring, and will usually occupy ten to twelve days. Two pounds shellac are now melted in an iron ladle, and one pound of the solution stirred in, and the glue poured out to cool upon slabs. It is both firm and waterproof.—*Journal of Applied Chemistry.*

Pharmacy.

SOLUTION OF TAR.

M. Henrotte gives the following formula in the *Repertoire de Pharmacie* for a preparation similar to the popular *Goudron Guyot*:—

Norwegian Tar	300 grammes.
Bicarbonate of Soda	250 ,,
Rain Water	500 ,,

Allow the mixture to react in the cold for two hours, then gently boil it for a quarter of an hour, stirring continually. Remove from the fire and add of boiling rain water 9,500 grammes. Agitate briskly for a few minutes, then let the mixture cool. After cooling, let it be well shaken on several occasions. Finally, let it clear itself by deposition of any undissolved tar.

The first boiling produces a sort of tar-soap in the form of a soft, clear-yellow, and homogeneous mass. To a great extent this soap becomes perfectly dissolved in the water, and imparts to it a brown colour. It is important that the boiling should not be long continued, lest it should decompose the tar, and it is further desirable that the mixture should be allowed three or four days, or even longer, to clear itself, as it thereby acquires more aromatic properties.

ARECA NUT.

As it seems that Areca Nut is likely to come in for official recognition, and as there has been a question raised as to its method of action, mechanical or therapeutic, the following note, contributed by Mr. Charles Andrews, M.P.S., to the *Pharmaceutical Journal* is useful. Mr. Andrews states his experience of its use in India, acquired during a residence in the Bombay Presidency, where he has frequently known it used by the natives with very good effect as an anthelmintic.

The natives pick it off the tree, and *grate* it on an ordinary nutmeg grater. About a teaspoonful is administered, after the patient has fasted 12 to 14 hours, either made up into a bolus with ghee (clarified butter) or floating on milk, the latter being the favourite method. It generally acts (without any other medicine being given) in about an hour after administration, and is efficacious for round as well as tape worms. It is used both for the human subject and dogs in the same manner and dose.

His opinion is that it is much more useful given *grated* than in *fine* powder. A celebrated "dog powder," largely sold, he believes to consist of nothing but this areca nut powder.

COCA.

At the evening meeting of the Pharmaceutical Society on March 4 a specimen of coca was exhibited, which had been contributed by Mr. Sieveking. In reference to this Professor Bentley remarked that coca, the botanical source of which was *Erythroxylon coca*, had recently been recommended in this country by Dr. Sieveking as a new medicinal agent. Attention was first called to it by Spence, well known for his travels in South America, who described the leaves as being chewed by the natives, who attributed to them the most extraordinary properties. It was asserted that, by their use, a person was enabled to go a considerable time without food, and an enormous quantity was used in South America, as much, according to Johnston, as 30,000,000 lbs. annually. Other writers did not speak so highly of it as Mr. Spenco; but there was no doubt it did possess some very powerful properties, not serving as a food, but still allaying the feeling of hunger. It was also used by mountaineers, who said it enabled them to reach high elevations without difficulty of respiration. Like most substances used in this way, it had injurious narcotic effects upon the constitution; and a new base had been discovered in it, to which the name of *Cocaine* had been given. Coca had been used for some time on the Continent as a remedial agent, and to some degree in England; and several years ago he had called attention to it as being worthy of an extended trial.

THE DECOMPOSITION OF GINGER LOZENGES.

At the evening meeting of the Pharmaceutical Society, Mr. Greenish reported some miscroscopical investigations on which he had been engaged in regard to a fungus formed on a certain ginger lozenge, which had been given to him by Mr. Rimmington, of Bradford. The result of his inquiry was to show that the fungus was of the same genus as that to which the potato disease is said to be due. To account for its presence, it was possible, seeing that the lozenge is mainly composed of dextrin, and that the starch granules of which the dextrin is composed are those of the potato, and that it is also well known that after a potato has shown symptoms of disease and is rendered unfit for food, the starch granules remain intact, and are utilised, therefore, the dextrin found in these lozenges was the produce of diseased potatoes. Mr. Bottle and Mr. Hampson had observed a similar decomposition, but only in ginger lozenges, which seemed to indicate that the fungus must have originated with the ginger; but Mr. Cooper remarked that he had noticed such a result also in pepsine lozenges.

N-GAI CAMPHOR.

Two Papers were read at the same meeting on a peculiar and little known kind of camphor, specimens of which had been received by Mr. Daniel Hanbury from Mr. F. H. Ewer, of th Imperial Maritime Customs of Canton. Mr. Hanbury stated that this N-gai camphor, as it is called, was much esteemed i China, and he quoted from a work of Rondot the following table of prices per picul (133½ lbs.) of the various kinds of camphor to show the degrees of value attached to them. The were:—

	Dollars.
Formosa camphor	25
Japan camphor	30
N-gai camphor	250
Malay camphor, first quality	2,000
,, ,, second quality	1,000

Mr. Hanbury found that the plant sent by Mr. Ewer was no species of *Artemisia*, though a member of the same order. It proved to be *Blumea balsamifera*, DC., a tall, coarse-looking, herbaceous plant of Eastern Asia, an abundant weed in Assam and Burma, and common throughout the Indian Islands. It is well known to emit when bruised a strong odour of camphor, and in Burma a crude camphor is even extracted from it. Many years ago a European named O'Riley purified some of this camphor and attempted to bring it into notice as an article of commerce.

It is probable that the *Blumea* is not the sole source of N-gai camphor, for, according to Mr. Ewer, the name N-gai is applied to designate several plants, including both *Labiatæ* and *Compositæ*. The camphor is used not only in medicine, but also in the manufacture of the scented kinds of Chinese ink. Mr. Ewer states that about 15,000 dollars' (3,000*l.*) worth is annually exported from Canton to Shanghai and Ningpo, whence it finds its way to the ink factories of Wei-chau and other places.

The chemical investigation of this camphor had been undertaken by Mr. Sydney Plowman. He found that the crystals of N-gai and Borneo camphor were almost identical, but these were very distinct from those of laurel camphor. A similar correspondence was found as regards the tension of vapour of the various kinds. The mean of two sets of experiments showed the following proportions:—Laurel camphor occasioned the depression of the mercurial column 4·5 millimètres; N-gai camphor 2·8 millimètres; and Borneo camphor 2 millimètres. The specific gravity of laurel camphor was found to be ·995; that of N-gai camphor, 1·02; and of Borneo, 1·011.

The melting point (or rather, the mean of the melting and solidifying points) of laurel camphor was 177° C., of N-gai camphor 204° C., and of Borneo camphor 206° C.

Laurel camphor, exposed to a stream of washed but not dried gaseous hydrochloric acid, at the ordinary pressure and temperature, absorbed it rapidly, and in a few minutes became a colourless, perfectly transparent liquid. N-gai camphor under the same conditions absorbed the gas extremely slowly, and though kept in a constant current for several hours, did not absorb sufficient to become fluid, but still remained in fragments, though surrounded by a small quantity of a colourless liquid. It seemed after the lapse of some time to cease to absorb more gas, for no further apparent effect was observed after a certain point was reached. Borneo camphor when treated in a like manner behaved in every respect similarly to N-gai camphor.

Gaseous hydrochloric acid, dried by passing it through strong sulphuric acid, when passed over laurel camphor, quickly converted it, as before, into a colourless liquid. The N-gai camphor was affected by the dried gas as by the moist, but somewhat more slowly, while the Borneo was not visibly acted upon at all, even after exposure to the stream of dried gas for many hours:

it on removing it it was found that the grains adhered to-
ther, showing that some slight absorption had taken place.
Berthelot and Pélouze each state that Borneo camphor, when
ft in contact with moderately concentrated nitric acid, is con-
rted into a floating oil, which, when added to water, deposits
body identical with laurel camphor. N-gai camphor, when
ft in contact with nitric acid of a specific gravity of 1·42 for
hour, was found to be changed into a yellowish floating oil
th the evolution of dense, ruddy fumes. This oil, when
parated and added to water, with constant stirring, gave a
posit possessing exactly the odour of laurel camphor, and this
posit, when collected, washed, and dried by exposure in a
ll jar over sulphuric acid was quickly converted into a liquid
passing a stream of dried hydrochloric acid gas over it. It
is impossible to perform any more experiments in this
rection upon it, since the whole of the N-gai camphor at dis-
sal was so extremely small that scarcely sufficient for this
periment could be used without giving up some equally im-
rtant operations. It would, however, have been very interest-
g to have obtained sufficient of this deposit to have made an
timate analysis of it, so as to have determined whether it had
e same composition as laurel camphor.

Laurel camphor, when treated in a similar manner with nitric
id, yielded an oil floating on the acid, without, or with very
ght, evolution of nitrous fumes. This oil, when separated
d added to water, yielded a deposit having a terebinthinate
well as a camphoraceous odour.

After describing elaborate experiments which had been
rried out to ascertain the chemical composition of the specimen,
e difficulties of which were much increased by the very small
antity (about half an ounce) available, Mr. Plowman con-
ded that N-gai camphor is isomeric with Borneo camphor;
at is to say, it possesses the same elements in the same
ntesimal proportions, the same number of atoms in the
lecule, and, as far as can be determined, the same chemical
nstitution, but differs in physical properties, viz., its much
gher volatility, its perceptibly different odour, and somewhat
eater hardness and brittleness. It has been omitted to
ntion that N-gai camphor has an odour closely approximating
t of laurel camphor, but much less powerful, while Borneo
nphor, in addition to its weak camphoraceous odour, has a
agreeable peppery one also.

N-gai camphor may, therefore, like Borneo, be looked upon as
monatomic alcohol of the series $C_nH_{2n-3}HO$, viz., $C_{10}H_{17}HO$,
e aldehyd of which is laurel camphor, $C_{10}H_{16}O$.

Mr. Moss said one other investigation, which would be very
teresting, would be to ascertain the action of an alcoholic
ution of N-gai camphor on the plane of a ray of polarised
ht. Common laurel camphor rotated the ray to the right,
d so did Borneo camphor; this new variety might or might
have the same effect. If he understood rightly, Mr. Han-
ry referred N-gai camphor to a composite plant, and it was
own that from the volatile oil of feverfew flowers there was
osited a camphor, which, though it had precisely the same
nposition as laurel camphor, rotated the ray to the left. It
ght therefore be that the N-gai camphor, though it had the
n composition as the Borneo, might rotate the ray to the
t, so that in this one natural order (*Compositæ*) there would
two camphors, one bearing the same relation to Borneo
nphor as the other did to laurel camphor.

ON KEEPING HYDROCYANIC ACID.

Mr. F. Baden Benger also contributed to the same meeting a
te on a proposed method of storing and dispensing small
antities of hydrocyanic acid. He said:—The uncertain
ength of hydrocyanic acid as met with in pharmacy has
rmed the subject of frequent lamentation from pharmacists
d medical men for many years past. To remedy this it has
nerally been suggested to use a metallic cyanide as a sub-
tute. Hydrocyanic acid is, however, a remedy not likely to
appear from physicians' prescriptions very suddenly, and I
refore venture to bring before the Society a little contrivance
storing and dispensing small quantities of it, which I be-
ve will be found useful. It consists, in fact, of a bottle from
ich the contents may be removed without taking out the
pper. A small glass tube, shaped like the barrel of an
inary half-ounce syringe, is drawn out to a rather long, fine
nt at one end, and sealed in the flame of a spirit lamp or
nsen's burner; it is then filled with the acid and a piece of
canised sheet india-rubber tied *tightly* over the mouth. When
uired for use, the point is scratched with a file and broken off; by pressing the finger on the india-rubber diaphragm any required quantity of acid can be taken out, only the same bulk of air entering the tube when the pressure is removed. It is then placed, with its point below the surface of mercury, in a little upright glass vessel.

By this method the only loss of HCN is the small quantity which diffuses in the air contained in the tube as it is gradually emptied, and is not sufficient to be of practical importance. It is of course necessary to bind the india-rubber tightly over the mouth of the tube, which should be of yellow glass, or varnished by a dip in solution of shellac coloured with coralline.

Vulcanised india-rubber must be used, as the HCN diffuses rapidly through pure india-rubber.

Not the slightest deterioration was found to have occurred in acid so kept for fourteen days. These tubes can be filled and sent out by wholesale houses instead of bottles, and can be as easily re-filled.

Mr. Umney thought the suggested contrivance would not meet with much favour with wholesale houses on account of the difficulty in packing it safely.

Professor Attfield said another objection occurred to him, viz., that the mercury in which the point of the tube was placed might get upset; and if it were not replaced, the risk of alteration of the acid might be greater than before. This, however, might be avoided if, instead of placing the vessel in a cup of mercury, an india-rubber cap were placed over a thicker quilled extremity. The tube might also be graduated with five-minim or ten-minim marks.

POWDERED COAL-TAR FOR WOUNDS.

M. Magnis-Lahens, of Toulouse, adds charcoal to coal-tar (33 per cent. of the latter), and thus obtains a light and porous powder, which does not irritate wounds, and which is easily washed off with cold water. This combination is a very useful mixture of two antiseptic substances. The charcoal absorbs the gases formed by fermentation, coagulates the albumen, and prevents its decomposition; thus effectually assisting the carbolic acid contained in the coal-tar.

Obituary.

Adshead. — January 16, 1874, Mrs. Elizabeth Adshead, Chemist and Druggist, of Dobcross, Saddleworth, Yorkshire.

Blankley.—February 22, 1874, Charles Steile Blankley, of Gainsborough, aged 29. The deceased had been a partner in the firm of Blankley & Nophews, of Gainsborough, until December last, when he was compelled to withdraw on account of ill-health.

Bunn.—February 16, 1874, Mr. Charles Bunn, Pharmaceutical Chemist, of St. Botolph Street, Colchester.

Carr.—January 24, 1874, Mr. William Muntou Carr, Chemist and Druggist, of Eynsham, Oxon.

Chave.—February 13, 1874, Mr. John Anstey Chave, Pharmaceutical Chemist, of Uxbridge.

Lewis.—February 21, 1874, Mr. John Rigby Lewis, Chemist and Druggist, of Runcorn.

Meggeson.—February 21, 1874, Mr. George Meggeson, at his residence, Gunnersbury, near London, aged 90. Mr. Meggeson had for many years retired from business, but his name is well known to the trade in connection with the medicated lozenge business still carried on as Meggeson & Co. in Cannon Street, a business of which he was one of the original founders. He was for some years a member of the Pharmaceutical Council.

Morson.—March 3, 1874, Mr. Thomas N. R. Morson, at his residence, 38 Queen Square, London, aged 73.

Proctor.—February 10, 1874, Professor William Proctor, jun., of Philadelphia.

Routledge.—February 13, 1874, in his 71st year, Mr. James Routledge, for many years a member of the firm of Davy, Yates, & Routledge, Park Street, Southwark.

Sprigg.—November 26, 1873, Mr. Henry Sprigg, Chemist and Druggist, of St. Neot's.

Wrangham.—March 3, 1874, Joseph Wrangham, of the firm of Wrangham & Hardy, Chemists, Melton, aged 41.

THE SPONGE FISHERIES OF THE GREEK AND TURKISH ARCHIPELAGOS.

ALTHOUGH the sponge may be found on almost every shore, only in warm latitudes does it attain a perfection sufficient to become an article of commerce. Alike in appearance and in substance, it belongs to the same class with the coral, being in fact the dwelling-place of a multitudinous colony of tiny polypes, all combined together, in the operation of expanding their skeleton abode. At the first stages of existence sponges are little gelatinous bags, apparently possessed with the invaluable power of locomotion, by which means they distribute themselves about to different favourable spots. The wisdom of this arrangement is very evident, or otherwise well-stocked localities would be overgrown, and the distribution would depend upon mere casualties, such as volcanic action or disturbance of the waters by tempests. We next find them adhering fixedly to a rock, where, from some internal secretion, their skeleton forms commence to develop, and then they remain stationary, until the mass has become like the sponges we see, only covered always with a gelatinous frame, furnished with pores or mouths, which suck in the sea-water for nutriment, and with large holes, through which it is expelled again. During certain seasons of the year the canals traversing the sponge are found to have their gelatinous lining studded with little yellow buds, sprouting out: these increase, and at length become detached, and are carried out by the stream of water, and, thus ejected, float about and continue the work of creation. Like plants, while retaining their specific characters, they luxuriate in individual differences, the general form or aspect of each species being preserved; but as two plants do not precisely correspond in the number of branches or leaves, so do these vary as accidental circumstances may determine. When torn or injured, sponges repair the wound, and specimens that have been lacerated show distinctly the new matter by which the hiatus has been filled up.

There are a very great number of different sponges, and some variety is found on almost every shore. We are not exactly acquainted with the duration of their life, nor with the degree of rapidity in their growth; but must conclude that they grow promptly if it be that they can be fished for with success after the second year in places which had been previously exhausted of them. Some attain great dimensions, having been found more than three or four feet in height. They are very common in the seas of warmer climates, where they attain the largest dimensions. They are less so in those of temperate regions; and, finally, as we approach the ice of the pole, they become more and more rare and smaller, and utterly disappear near the polar circle. Those we use for washing are chiefly brought from the Mediterranean Sea, and the Greek and Turkish Archipelagos. These sponges are obtained, some by dredging, and some by diving: the latter mode is rendered more easy than it otherwise would be by the exquisite transparency of the water, which enables the diver to discern his desired object growing at the bottom of the water. Fixed to the rocks, they may be seen festooning the deep sea caves, lining the walls of submarine grottoes, and hanging like fantastic pendants from the roof; some like inverted vases, some like fans, others like intertwisted branches. The sponges of the Bahamas and other West Indian islands are large in size and coarse in quality; but great quantities are gathered, and about 200,000 lbs. are sent annually to Great Britain, where the demand increases for the commoner domestic purposes. These sponges are torn from the rocks by a fork at the end of a long pole, and in order to get rid of the animal matter they are buried for some days in the sand, and then soaked, and afterwards washed. The use of sponge was well known to the ancients, who derived their supplies from the same source whence the best descriptions are at present obtained by ourselves. The annual value obtained by the Turks and Greeks amounts to upwards of 100,000*l.*, to obtain which results nearly the whole population of the Cyclades and the Sporades take their part. The number of men thus employed is between 4,000 and 5,000, finding the crews of about 600 boats, which extend their voyages to the coasts of Barbary and Syria. To be an expert diver is an essential qualification for success in life. The children are trained from infancy to these amphibious pursuits, and when arrived at manhood the status and matrimonial prospects of the young Halkiote or Cypriote is made to depend upon agility in this occupation. A visitor to the Island of Symi mentions his surprise, upon entering a large Greek tavern or café, and there seeing many European-looking characters. These were agents come to purchase sponge, which forms the chief traffic of the island. In the port were vessels of various sizes, the smaller preparing to start upon the sponge fisheries, the larger waiting for cargoes of the same article, which they take to Smyrna, where the sponge is sorted for the European market, the finest quality being exclusively confined to the English market. When packed in casks the sponges are filled with fine white sand, and when dried are compressed into a very small compass. The object of the sand is said to be to preserve the sponge: it also adds considerably to the weight, and as they are always sold by weight it appears at first to be rather a dishonest mode of proceeding; but it is probable that, were it not for the sand, the fine sponges would weigh so little that they would be cheaper than the coarse ones, whereas if the fine sponge requires a greater quantity of sand to fill up its pores its weight will be proportionately increased; thus the mixing the sand and the selling by weight may be in fact perfectly fair and honest. Vice-Consul Biliotti, in his account of the commerce of Rhodes and the Sporades, furnishes us with information about the sponge fishings and the number of persons so engaged. At one time Rhodes was the chief *entrepot*, but of late years the surrounding islands have been visited by steam vessels, which have reduced the traffic at that place to insignificant proportions. Although of the same kind, sponges vary a good deal in price in consequence of the low quality of those fished by drags. Without taking these last into account, the following shows the average prices per oko, equal to 2¾ lbs., in the year 1872:—

	Fine	Honeycomb	Hard Brown
Bengazi	40/	17/6	8/
Mandruha	48/ to 64/	19/ to 21/	10/ to 12/6
Syria	29/ .. 32/	11/ .. 12/6	4/ .. 5/
Caramania	24/ .. 32/	9/6 .. 11/	3/3 .. 4/
Cyprus	......	11/ .. 12/6	......
Crete	24/ .. 32/	11/ .. 12/6	......
Rhodes, and other Ottoman isles ..	24/ .. 32/	8/ .. 9/6	......
Greece	12/6 .. 16/	6/3 .. 8/	......

Bengazi and Mandruha sponges are not sold by weight, but by piece, but for comparison sake their prices have been proportioned to okes.

Calymnos is the island possessing the greatest number of sponge-fishing boats—nearly 300; but they are not to be compared for construction, size, and gear to those of Symi. However, within the last few years the Calymniotes have built in the island and purchased at Symi annually 10 or 12 boats, mostly of six and seven tons, for the purpose of proceeding in them to the coast of Africa, where they could not go in their old boats of three and four tons. Boats of larger size than those hitherto used are also required for diving apparatus, of which there are now 24, all of British manufacture. The number of these apparatus stands in a low proportion with that of the boats fishing for sponges, especially when it is considered that the produce of the former is on an average three and four times that of the latter. But the divers have not the means of purchasing themselves diving apparatus, and these are furnished to them by native undertakers, who receive for their share one-third of the fishery. Although they find great convenience in this investment, still the undertakers themselves cannot dispose of much ready money, most of their capital consisting in shares in sponge-fishing boats and in credits on the divers. The only article exported from Calymnos is sponges to an annual value of about 45,000*l.*, of which 30.000*l.* worth go to Great Britain. Formerly they were forwarded through Smyrna merchants, but a few years since the Calymnos merchants took their own sponges to Great Britain, from whence they brought back other merchandise. The steamers of the Asia Minor Company, which had begun to call in 1868 at Calymnos, would have been the means of accelerating the development of this trade, but so little did they find to do that they were obliged to give up the line. This circumstance was owing, in a great measure, to the principal merchants of the place, who are owners of the sailing packets, continuing to send and receive their goods in their own vessels rather than with a foreign steamer, in the profits of which they had no share. Upon the demand for sponges in the European market depends the condition of the people, for when that demand is slack they are reduced to the bare necessaries of life. The Castel-Rossiotes boast of being the best divers in the Archipelago. They go, they pretend, as deep as 40 fathoms, and despise diving apparatus, of which not a single ne has hitherto been employed by them, as they can descend n them only a little more than 20 fathoms. The average nnual amount of sponges fished by Castel-Rosso boats may be eckoned at 6,000*l*., of which 2,000*l*. find their way to Great ritain. The quality of Caramania sponges is not much liked n consequence of the roots being red, owing, no doubt, to their rowing in ferruginous rocks. Of all islanders in the Ottoman rchipelago, the Halkiotes have turned out to be the best divers ith the apparatus. While at Symi they hardly cover their xpenses, the Halkiotes make on an average 500*l*. each. Every alkiote is a diver. It is a kind of apprenticeship through hich they must pass in their young days, even if they intend ater to follow other trades. In summer the sea-shore swarms ith naked children of both sexes, some of them no more than hree or four years of age, for whom garments are almost unnown, and who seem to be amphibious beings, as they live as uch in the water as on the shore. Babies are carried about ll day long quite naked in their mother's arms, and get thus ccustomed from their younger days to resist the heat of the un. Sponges to an annual value of about 10,000*l*. are fished y the Halkiotes, half of which are sent to Great Britain, and e other half to France. Nothing else is exported from the land. At Leros the sponge-fishing boats number only twentyeven, two with diving apparatus, and are manned with 200 ivers and rowers. The average of sponges fished by the eriotes annually is 5,000*l*. They send them usually for sale o Calymnos and Symi, from whence about two-thirds are nally forwarded to Great Britain. The inhabitants of the land of Patnus had never followed the sponge fishing. However, a diving apparatus was recently purchased by a native, and e results obtained have been such that others will, no doubt, ollow his example. Within the last two years six boats have lso been fishing for sponges with drags. This mode of fishing, lthough not to be compared with that of diving apparatus, has he advantage of cheapness. With 10*l*. the necessary gear for drag is provided, while nearly 150*l*. are required for a diving pparatus.

The most important of the islands is Symi, and the general ccupation of the Symiotes is sponge fishing. Their boats are the best of all those engaged in this industry in the Mediterranean Sea. The sponge divers are also in a more independent condition than the divers of the other islands of the Sporades. Most of them are sole owners of their boats, and several can muster the greater part, if not all, of the money required for the sponge fishing season. About 100 divers, who cannot find boats at Symi, proceed in large vessels to the coast of Africa, and there hire boats in which they carry on their industry. They make on an average 1,500*l*. during the season. Thirty or forty of the boats continue to fish for sponges in the winter with drags. The sponge-fishing boats (275) have about 18,000 divers and rowers. The number of diving apparatus at Symi is twenty-six, and the average value of sponges fished by the Symi boats is 50,000*l*. yearly, which, together with other 15,000*l*. brought thither for sale from other places, even from Greece, are exported to Europe in the following proportions: Great Britain, 30,000*l*.; Austria and Germany, 21,000*l*.; France, 9,000*l*.; Italy, 5,000*l*. In consequence of the inferior quality of sponges fished with drags, there is a great difference in the prices of sponges of the same kind, which hitherto varied but little, according to the localities where they had been fished. Within the last few years the internal trade has much increased owing to the enterprise of the inhabitants, although the soil is very barren. As soon as the Symiotes manage to collect a small capital they purchase sponges, start with them for Europe, and procure foreign goods, with which they return to their island. Little by little their commercial operations have been extended, owing to the credit they obtain in Europe when they are known. Hence, the Symi merchants, who in general do not possess much ready money, are enabled to carry on their business on a large scale. In consequence of this extension of trade and of maritime pursuits, the Symiotes prefer living near the sea shore; but, there being no space for building, they are compelled to blow-up, at great expense, whole sides of hills to make room for constructions.

The following shows the number of boats and diving apparatus respectively, as well as the different places where they are fished, together with the approximate value of the crop for the year 1872:—

Spot of Fishery for Sponges	Rhodes		Symi			Calymnos			Halki			Castel-Rosso		Leros			Stampalia and Telos			Totals		
	Diving Apparatus	Value	Diving Apparatus	Boats	Value	Diving Apparatus	Boats	Value	Diving Apparatus	Boats	Value	Boats	Value	Diving Apparatus	Boats	Value	Diving Apparatus	Boats	Value	Diving Apparatus	Boats	Value
		£			£			£			£		£			£			£			£
engazi	..	..	1	24	3,900	7	68	12,500	..	..	..	..	..	1	5	1,000	..	..	..	9	97	17,401
andruha	1	300	17	82	23,000	7	64	17,500	19	..	10,000	4	1,000	1	6	1,200	1	2	700	46	158	53,700
ymi.. .. .. aramania .. .. yprus	2	700	2	17	3,600	..	50	8,000	..	..	..	20	3,800	..	..	..	..	..	..	4	87	16,100
rete	2	650	6	25	6,000	..	20	3,000	18	9	7,500	..	..	1	14	2,500	3	4	1,600	30	72	21,250
ttoman Archipelago	1	300	..	11	1,400	2	17	2,800	2	..	600	..	..	..	..	..	..	6	700	5	34	5.800
reece	2	500	..	..	..	8	20	4,500	6	..	1,500	..	..	..	..	..	..	..	..	16	20	6,500
Total	8	2,450	26	159	37,900	24	239	48,300	45	9	19,600	24	4,806	3	25	4,700	4	12	3,000	110	468	120,750

The Stampalia sponges are considered to be the best fished in e Archipelago. They all go to Great Britain, as well as most f the common, and together their value may be reckoned to mount to 2,500*l*. a year. The last year's fishing for the Benazi fine sponges was a very successful one, and the number of reek and other ships from the Levant that are attracted to hat port on the coast of Tripoli for the sponge fishing is yearly ecoming greater.

With few exceptions, in which the owners of boats had apital, Consul Biliotti mentions that all the funds required for he equipment of sponge boats have been furnished by native oney-lenders, and foreign capital, especially British and rench, has been invested in diving apparatus since the introuction of this new mode of fishing for sponges. The French rm, Rouqueral et Denayrouze, who had employed as many as hirty apparatus, have reduced their operations by half, while e use of British machines continues to increase. Besides the rivate motives which the above French firm may have had to educe their operations, there is also a preference on the part of e natives to work with British rather than with French diving pparatus. Owing to the depressed prices at which sponges have been sold during the last few years, and which have prevented divers from paying their debts to the native moneylenders, the latter, although in possession of bills for important sums of money, have not cash enough to equip all the boats which might take part in the sponge fishery. The number of these boats, which had considerably augmented within the last ten years, having thus decreased of late, is not now more than it was at that period; but the quantity of sponges fished is far superior in consequence of the more abundant crops of the diving apparatus. At the island of Halki, where ten years ago the produce in sponges was hardly 10,000*l*. a year, it amounts now, with the same number of boats, but working with diving apparatus, to nearly 20,000*l*. It would seem, however, that the produce in sponges is more than the demand, and if all the available boats could procure the required money to go fishing, the extra quantities which would then encumber the markets would lower the prices of the article to rates ruinous for the divers. The want of money for fitting out sponge-fishing boats, which seems therefore at first glance to be a drawback, is not a very unlucky circumstance, as it compels a number of boatmen to gain their livelihood by other employment—that of the coasting trade especially—thus leaving the meagre profits on sponges to be divided amongst the smaller number of individuals.

The total imports of sponges into Great Britain in 1870, the last year when any separate accounts of the article were kept at the Custom House, amounted to 837,159 lbs. weight, valued at 160,162*l.* sterling. Of these 100,023 lbs., valued at 10,041*l.*, were imported from Greece; 453,868 lbs., valued at 113,855*l.*, from Turkey; 179,403 lbs., valued at 14,500*l.*, from the British West India Islands; and the remainder in smaller quantities from Austria, Malta, France, Germany, and the United States. The uses to which sponge is applied are far too manifold to mention, and its advantages in respect to cleanliness and health make it one of the most valuable of the productions of nature.

CHEMICAL SOCIETY.

Thursday, February 19, 1874.

PROCEEDINGS of the Chemical Society. Professor Odling, F.R.S., President, in the chair.

The ordinary business of the Society being completed, the President called on Mr. James Bell, of the Laboratory, Somerset House, to deliver his lecture "On the Detection and Estimation of Adulteration in Articles of Food and Drink." The lecturer, after some preliminary remarks on the fiscal regulations with regard to adulteration, began with a description of the microscopic appearance of the various kinds of starch, as many of them, from their cheapness, are largely employed for the purposes of adulteration. He then considered the characters of pure coffee and of the various substances used to adulterate it, pointing out the most convenient methods for their detection. Tea, pepper and mustard were afterwards treated of in the same way. Owing to want of time, Mr. Bell was unable to complete his lecture, so that the adulteration of cocoa, tobacco, and beer was not touched upon. This admirable and instructive lecture was copiously illustrated by the most beautifully executed drawings of the structure of the various substances, as exhibited under the microscope. After the lecture many of the Fellows availed themselves of the opportunity afforded them of looking over the extensive collection of microscopic preparations connected with the subject.

Thursday, March 5.

Professor G. C. Foster in the chair. After the minutes of the previous meeting had been read and confirmed, and the ordinary business of the Society transacted, a Paper "On the Spontaneous Combustion of Charcoal," was read by the author, Mr. A. F. Hargreaves, in which he pointed out the best wood for charcoal for the manufacture of gunpowder, and also the best method of charring it. It appears that if it is ground too soon after being burnt the charcoal is liable to take fire spontaneously.

The other communications were, "Researches on the Action of the Copper-zinc couple on Organic Bodies. Part V.: On the Bromides of the Olefines. Part VI.: On Ethyl Bromide," by Dr. J. H. Gladstone and Mr. A. Tribe; "Researches on the Preparation of Organo-Metallic Bodies of the $C_n H_{2n}$ Series of Hydrocarbons," by Dr. D. Tommasi; "Note on the Action of Trichloracetyl Chloride on Urea," by Messrs. R. Moldoa and D. Tommasi; and "The Agglomeration of finely-divided Metals by Hydrogen," by Mr. A. Tribe.

The meeting was finally adjourned until Thursday, March 19, when there will be a lecture "On Dissociation," by Professor J. Dewar.

CHEAP ELECTRICITY.*

By W. H. WALENN, F.C.S.

IT is a popular belief among the unscientific that there is nothing that cannot be done by electricity. A certain class of inventors seem to have the same idea, and any difficulty that defies other means of solution is presumed to be overcome, or able to be successfully combated, by this wonder-working power. Some endeavour to make out that the sole obstacle to perpetual motion is removed by it; others believe that its powers of reducing metals are so recondite that it only requires a slight step to adapt it to the discovery of the transmutation of metals; and others, again, look upon electricity as the source whence the very *elixir vitæ* is to be obtained.

Among the purposes to which inventors have sought to apply electricity, such contrarieties appear as blasting rocks, capturing and killing birds; discharging fire-arms, fertilising seeds; making mirrors, metallising a human corpse; transmitting intelligence, destroying vermin. Besides these, many other remarkable applications may be cited, which, for their accomplishment, depend upon the property which electric force possesses of being somewhat readily made to excite other varieties of force, such as motive power, heat, chemical action, magnetism, and light. Motive power, by means of electro-magnetic arrangements, has been accomplished up to four-horse power. The heating power of the electric current is shown by the readiness with which platinum and iron are fused in the voltaic arc of a powerful electrical arrangement. Chemical action, excited by electric force, has been applied extensively in the arts; for instance, electrotypy, electro-plating, and electro-etching. Many more applications remain as scientific curiosities, to be soon raised to the dignity of useful and practical inventions, such as the reduction of metals from their ores, the manufacture of chemical compounds, and the production of various gaseous bodies in a direct manner. The applications of electro-magnetic power are innumerable, and range from the vast systems of telegraphy which at this moment encircle the whole of the civilised, and much of the uncivilised, portions of the earth, to registering the motions of a machine, or winding up an ordinary clock. This portion of the subject appears scarcely developed yet, and when electric power is more easily attainable, will assume giant-like proportions. Twenty or thirty years ago the electric light had only one development, namely, the convective electrical discharge between charcoal points; now it has at least two others, that arising from the ignition of rarified gas in Geissler's tubes, and the transmission of a continuous electric current through an insufficient carbon conductor enclosed in a non-active gas. The writer is informed that the latter application is likely to totally change the prospects of lighting by electricity, by enabling a number of lights to be placed in the same electric circuit.

At this place, the reader will perhaps ask, "What is electricity?" The answer to this question is not so easy to give as it might at first appear, and the writer perfectly recollects hearing a lecture, twenty-five years ago, that commenced with this query, to which the answer was, that we knew nothing about what electricity is, but could only define it as a something which produces certain definite effects. This definition is not so unsatisfactory as it seems to be, for many other well-known entities are described, and rendered intelligible and realisable by means of the evidences or manifestations of their existence; for instance, a very fair definition of mechanical force may be drawn from its power to prevent the descent of a weight, or to resist a pressure. According to this method, which appeals to the perceptive or external faculties of the mind, electricity might be described as that which produces heat, light, magnetism, and chemical action. Unfortunately for this view, electricity itself can be produced by means of either heat, magnetism, or chemical action, and perhaps by light;* it is, therefore, desirable that a method should be used to describe, connect, and classify these effects, which appeals to the deeper, more interior, and reflective faculties of the mind. This, perhaps, can be best accomplished by first of all defining the word force, and then realising from that definition, mechanical force, chemical force, and electrical force.

For the purposes of this essay force will be defined, as Professor Grove (now Justice Grove) defined it, in a lecture given at the London Institution, in January, 1842, namely, as a "mode of motion." This view has recently been promulgated by other philosophers (Dr. Tyndall, for instance), and it will tend to elucidate the matter if Grove's own words† are reproced here. He says :—"Physical science treats of matter, d what I shall to-night term its *affections*, namely, attraction, otion, heat, light, electricity, magnetism, chemical affinity. er, should the theories on these subjects be ultimately so fectually generalised as to become laws, they cannot avoid the cessity for retaining different names for these different affec- ons; or, as they would then be called, different modes of otion." We shall, therefore, no longer define electricity as *nething* which produces certain definite effects, but as a *force* mode of motion which may be communicated to particles of tter capable of receiving such motion. Its waves are of such nature that—when interrupted by a medium which poses their progress, but which would be able to trans- it the undulations entirely if it were large enough—ey are converted into heat waves, accompanied by luminous brations. If the motion be interrupted by a decomposible iid, the chemical affinity of the component parts of the fluid destroyed, and they are conveyed in opposite directions. At ght angles to the direction of motion of the electric force, the agnetic force always exists, and its amount and quality (boreal austral) has direct relation respectively to the amount of the ectric force, and to the direction in which it is travelling. larisation, or that property by which there appear to be posite qualities in different parts of the same body, or in parate bodies—such as the opposite charges of a Leyden jar, the contrary electrical condition of the metallic plates re- ectively, at the extremities of a galvanic battery—is the con- uence of the electric waves occurring in definite planes. rther, it appears that electrical wave motion, confined to a en space, as in an insulated but charged conductor, for in- nce, tends to excite the same kind of wave motion in the posite direction in a neighbouring conductor, and thus to pro- ce the phenomena of electrical induction; in other words, kind of electric polarity cannot be produced without the duction also of the other kind, either in another part of the ne body or in distinct bodies. Not only is electric force der specific conditions in each case convertible into heat, che- cal force, or mechanical motion, but also, under specific con- ons in each case, these forces are respectively convertible into ctric force. If, therefore, the undulatory character of any of these forces be conceded, it follows that electricity is a ve-propagated force, since the method of conversion of one ce into another is by changing the character of the wave- tion by which it is propagated.

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* From the *Journal of the Society of Arts.*

* See Grove's "Correlation of Physical Forces." Fourth edition, 1862, pp. 153, 154.

† *Ibid.* Preface, p. ix., *et seq.*

The classification of electricity as a force among the other ces of nature enables comparisons to be made, analogies to drawn, and results to be anticipated, which would otherwise ve been imperfectly known or wholly undiscovered. The re or less distinct perception of these relations and appli- ons have worked in the brains of inventors, and have pro- ed results more or less practical, the noticeable point in trical applications, or the uses of electric force, being their ersity, their great range, and the unique character of their le of action. The one point which has hitherto greatly ricted their general use and appreciation is that—produced n a galvanic battery—the force is dear in comparison with r forces, especially in comparison with heat, the power at ent universally employed for mechanical and other work.

he next question that arises is, "Can electricity be luced cheaply?" As remarked above, the most ordinary of generating, inducing, or producing electric power, is by ns of a galvanic battery, an arrangement which involves destruction of metallic zinc, the employment of powerful expensive chemicals, and a considerable amount of skilful ntion and waste of material, besides two very great incon- ences, namely, the occupation of great cubical space, and the ring and spilling about of chemicals that give forth noxious es and promote rust and dirt. For some twenty or thirty s past, electricians have sought to supplant the galvanic ery by the magneto-electric machine, which is free from the e objections. This has been partly accomplished; but are still some grave objections to the use of magneto- ric machines of the usual kind for the electric light, and for siting metals, or indeed for any purpose in which an electric nt of considerable capacity or quantity is required to cir- e in an absolutely continuous stream for a length of time, being just the quality of the electric power which is supplied ie galvanic battery. In ordinary magneto-electric machines, nly is the current not continuous, but it is induced in jerks or s, so that the term shock is a much more suitable word for ntermittent electric power produced by these machines than the term current, the shock occurring at the instant that the core of the coil giving the current undergoes the greatest change of magnetism, and resists the motion most strongly; the method When these react upon matter they constitute forces. The present tendency of theory seems to lead to the opinion that all these affections are resolvable into one, namely, motion; how- of approximating the quality of this kind of current to that of the galvanic battery is to rotate the coils so quickly that the duration of time between the intermittences is reduced to the smallest possible amount, but this necessitates the undue expenditure of mechanical power. Another, and still more serious objection to the ordinary magneto-electric machine is that the shocks are produced from the machine alternately in opposite directions; therefore, in order to derive useful work from this kind of electricity, it is necessary to reverse every alternate shock by means of a complicated and uncertain apparatus called a commutator. This reversal is never in practice so perfectly accomplished that none of the induced currents or shocks are lost or neutralised, for the electric power has to pass from revolving contact pieces to fixed metallic springs, and in so doing either leaps across the contact pieces or else burns the springs. The losses from the commutator only may therefore be said to be:—1st. By dissipation of electric power. 2nd. By neutralisation from imperfect insulation of the contact pieces. 3rd. By the reflex or opposite extra current induced in the coils at the time of making or breaking the electrical circuit. The most serious difficulty, however, in ordinary machines, is that the heat generated by the reflex and waste currents enlarges the axis of the machine, and tends more and more powerfully to stop it as it is driven faster, so that the maximum speed with which it can be driven with economy constantly decreases during continuous use. Again, in consequence of the waste of electric power, when a quantity of electricity is required, and when, therefore, large and heavy coils are used, these are made larger and heavier than they otherwise would be, to make up for the waste, thereby using up still more mechanical force or engine power to drive them than if they gave forth all the currents induced in them in a useful form.

The state of electric power described in the last paragraph has caused many inventors to search for a method of inducing continuous and uninterrupted electric currents in the magneto-electric machine itself, but for many years this desideratum eluded their grasp, and its possibility has been doubted by many. This result is said to be perfectly attained by Gramme's machine. This machine does not depend upon the increase or decrease of magnetic polarity, or upon the change of magnetic polarity, to induce the electric current, as all former machines have done; it simply depends upon the fact that if one pole of a permanent magnet be moved parallel to a long, cylindrical electro-magnet, the opposite magnetic polarity induced in the core of the electro-magnet, during the travel of the permanent magnet in one direction, will induce an electric current in the conducting wire which is of constant power, continuous, and without intermission during the motion of the permanent magnet in the same direction along the electro-magnet. To enable the current to be really continuous, and not to stop when the pole of the magnet has arrived at the extremity of the electro-magnet, the core of the electro-magnet is made annular, or ring-shaped, and it is wound in a continuous coil that is composed of a series of coils having blades that proceed to an axis in the centre of the annulus. Fixed springs take off the currents from the neutral points of this travelling electro-magnet. Thus, an equable and continuous current is obtained without the necessity of a reversal of any kind.

The importance of this realisation can scarcely be over-estimated, for zinc (the destruction of which in the galvanic battery yields electric force) is 20 times the cost of coal, weight for weight, and 200 times the cost of coal for equal quantities of potential energy.* Gramme's machine depends principally upon coal, either in the form of a gas-engine or of an economical steam engine, for its current cost; there is no heating beyond that due to the ordinary friction of bearings, and all the motive power conveyed to it is said to be utilised, because none of the induced electric currents are found to have been dissipated, neutralised, or opposed. Should the expectations held out by the new machine be realised in practice, it may not be long before the reduction of metals from their ores, the deposition of the common metals and alloys, and the obtainment at a cheap rate of chemical substances, the more recondite gases, and of artificial light itself, on a far grander scale than any that has been hitherto realised, become accomplished facts.

HERBALISTS AND THEIR PRACTICES.

By a Village Chemist.

I HAVE often been amused to see several truck loads of herbs of various kinds sent from our quiet village station during the summer months, which, upon inquiry, I have learned were gathered principally by Manchester herbalists, and were being despatched to their usual place of business. Early one Saturday morning last autumn I wandered merely from curiosity through Shudehill Market, Manchester, and was astonished to witness the display amongst other things of large bundles of dried plants. These were gathered by villagers around Manchester, and were being sold *wholesale* to the retail herbalist. I learned from this that there are in our midst both wholesale and retail herb dealers, like wholesale and retail druggists. Doubtless these large bundles would be sold to certain retailers, who were doing a profitable and large trade, and it would pay this class of herbalists better to stay at home and quietly carry on their trade in the shop, and allow others to do the most laborious and worst paying part of the trade. There is, however, another class of herbalists besides those already mentioned, namely, those who are at home only during the winter, and during the summer months spend a happy life, wandering about the country, gathering the various herbs required in the trade. When botanising, I have occasionally met with these men in places where I scarcely expected to find them, and sometimes I have had interesting conversations with them respecting their trade, &c. Many chemists have an idea that the so-called herbalists never intermeddle with poisonous plants, but collect only simple and harmless herbs. This is erroneous, and the sooner the notion is dispelled the better. Hemlock, foxglove, and belladonna are collected in enormous quantities by the wandering herb-gatherer; these, I believe, are three of the most poisonous plants to be met with in the British Islands. It is probable, however, that a considerable proportion of his sackful finds its way through the wholesale druggist to the pharmacist, and it should be added that the men who collect the herbs are generally well acquainted with the peculiarities of the plants they seek, and particular, as a rule, to gather them at the most suitable time. Hemlock, for instance, which many persons confound with other plants, such as the hedge hemlock and the water hemlock, is well known to these men, though they make no pretensions to botanical knowledge, by the stem, covered with dark purple spots, and by the peculiar mouse-like odour emitted by the bruised leaves. They have learned that the herb is almost valueless as a medical agent, except it is collected and dried only when it is coming into flower. They generally dry the hemlock suspended on strings in a darkened room.

Herbs which are harmless in their effects are gleaned in enormous quantities: such as centaury (*Erythræa centaurium*), mountain-flax (*Linum catharticum*), buckbean (*Menyanthes trifoliata*), agrimony (*Agrimonia officinalis*), eyebright (*Euphrasia officinalis*), and wood-sage, are collected by hundredweights. The principal book still used by these men is Culpepper's "Herbal." Lately, when inquiring from a village book-agent about his sales, he stated he had sold a great number of copies of this work. The engravings as well as descriptions of the different plants treated in this book are far from reliable or correct; but, I suppose, the more crude the more followers. Centaury has been from very early times esteemed as a "plant of power." Mr. Albert Way quotes an old Sloane MS., which says:—"For hem that may not browke hir mete, take centorie, and sethe it in water, and let the sike drinke it warme three daies and he schal be hoole." This was one way of relieving the dyspeptic in other days. This species is commonly called "century." All the species in the gentian family, of which this forms a part, possess tonic properties, another plant, the yellow-wort (*Chlora perfoliata*), being also largely collected. Any patient asking for advice from the town herbalist in cases of indigestion in any of its numerous forms is recommended to make an infusion (tea) of the centaury, yellow-wort, and buckbean. The remedy is at least harmless. When they are thought to require purgatives, a bunch of dried mountain flax is given: this is mostly prepared in the form of a decoction. In cases of diseases of the kidney or the bladder diuretics are resorted to · generally the young branches of the broom are employed.

The old doctrine of signatures is still extensively believed in. For instance, the pretty little eyebright, *Euphrasia officinalis*, has a small spot on the corolla, said to resemble the pupil of an eye; therefore it is supposed to be marked out, or *signed*, as a remedy in all diseases of the eye. It is thought the Great Creator of all things has thus put His signature upon the vegetable kingdom, and it is owing to the stupidity and blindness of man that plants are not discovered to be specific in all diseases. On the same principle the berberry (*Berberis vulgaris*), or, as more frequently pronounced, *barberry*, has this signature stamped upon its bark, the yellow appearance resembling the skin in jaundice: it is therefore remedial in that disease. To such an extent has this doctrine been carried, that the medical faculty have thereby been deceived into using the berberry. It was introduced into the old pharmacopœias, although afterwards, when found to be inert, it was discarded.

The herb doctor is not unfrequently consulted in cattle diseases. One of his chief veterinary remedies is pettifew (a species of *Matricaria*) and tansy (*Tanacetum vulgare*). Some of these persons evidently keep up with the age, and are wide awake to their own interests, for when their stock of simples fails in the winter season, and it is impossible to secure a fresh supply, they resort to gentian root, chamomile flowers, and senna leaves.

Herb-bennet, or the common avens (*Geum urbanum*), is still used, for what purpose I cannot tell; but when speaking to one of the fraternity, I was informed it was the *blessed herb*. It was formerly used by monks, &c., and called *Herba benedicta*. This brings forcibly to mind other days, when the gardens surrounding monasteries and castles contained nothing but medicinal plants, such as horehound and chamomile, which were employed by the monks, who were then the only physicians. The herb-doctor can point back to a very remote age as the epoch when his profession was first established. Even now we find many plants, which have by some means been admitted into the British flora, growing only about old castles and monasteries: such, for example, is the Alexanders (*Smyrnium olusatrum*). Betony (*Betonica officinalis*) was a great favourite with our forefathers, and to such an extent were the properties of this herb praised that it has originated a proverb, "he possesses as many virtues as betony."

On the 4th inst. the North Riding Coroner held an inquest on the body of Mr. Joseph Wrangham (of the firm of Wrangham & Hardy, chemists and druggists, of Malton), who died suddenly on the previous day. It was supposed that death had resulted from an overdose of hydrate of chloral, and in consequence the coroner had ordered a *post-mortem* examination to be held. From the evidence adduced it seems that deceased went to bed about his usual hour on Monday evening, and when he arose next morning about seven o'clock he went into the shop. Directly afterwards he returned to bed, saying that he had had a bad night (he was suffering from tic doloreux), and would lie all day. Once or twice during the day he was seen all right by his sister, but at 11.30 she went into the room and found him apparently dead, and with his face very black. On a table was a glass which was found to have contained hydrate of chloral, which deceased was known to take to alleviate pain, and it was at once assumed that he had accidentally taken an overdose from the shop in the morning, and that it had caused his death. At the inquest William Young, M.D., who had made the *post mortem*, said that in his opinion death had not resulted from the chloral, but from a fit of syncope, the result of pulmonary enlargement. He deposed that there was considerable disease of the internal organs existing, and quite sufficient to account for death. The jury thereupon returned an unanimous verdict of "Death from natural causes." Deceased was only 41 years of age, and was widely known and very highly respected.

THE PREPARATION OF, AND COMMERCE IN, FISH OILS.

By P. L. Simmonds.

E of those subjects about which little is generally known is collection and uses of various fish oils, and other oils from rine animals, such as the whale, the seal, the turtle, &c.; and the value of the aggregate commerce of these in the United igdom exceeds on the average one million sterling a year, spective of the large trade in other countries. Seal oil and oil are now two of the most important, whale oil having ch declined in quantity and value; but there are very many oils which have an extensive local use. Fish oils for burn- purposes have been greatly supplanted of late years by the aper mineral and vegetable oils.

Vhale Oil.—The imports into the United Kingdom were, in

1855.

	Tuns	Value
		£
in oil, or blubber	13,712	660,386
rmaceti, or head matter	3,645	456,900
Total	17,357	1,117,286

1872.

	Tuns	Value
		£
n oil	15,004	522,056
maceti	3,715	333,534
Total	18,719	855,590

n 1872 23,111 cwts. of animal oil were also imported, valued 16,454*l.* From the sources of supply this would probably include any fish oils or products of the fisheries, but would sist of lard oil, tallow oil, horse oil, &c.

practice is said to have become prevalent in America of ing whale oil with sperm oil; and as the former is a drying like linseed oil, attracting oxygen from the atmosphere, and lening ultimately into a horn-like substance, the smallest ntity mixed with sperm oil injures it irretrievably for lubri- ng purposes. In consequence of the variation in the specific ity of pure sperm oils, the adulteration is not appreciable pt by actual experiment on machinery. The difference of e between the two oils opens the door to a large amount of d, for which the remuneration is great, while the risk of ction is very small. Thousands of gallons of whale oil are ned off every year for use in machinery at sperm oil prices, h to the detriment of industrial interests.

he train oil of the beaked whale (*Balæna rostratis*) consists cipally of a liquid fat, free from glycerine, a minute portion ermaceti, and traces of other fats. Its specific gravity is 7 at 52°. It burns with a bright flame, and emits less ke than common whale oil. A polar whale yields on an age about 120 barrels of oil, each 36 gallons.

al Oil.—At St. John's, Newfoundland, the head-quarters e sealing trade, the blubber used to be generally put into en cribs, beneath which were wooden pans to catch the oil. rtificial heat was used in this process. The oil which runs he first two or three months is termed *pale seal oil*, and s 50 to 70 per cent. of the whole quantity. As putrefac- takes place, the oil becomes darker and more offensive. putrescent refuse and the clippings of the pelts yield er quantities of oil by boiling (*boiled seal oil*). This pro- is now very generally replaced by steam apparatus. A rm and much better quality of oil is thus obtained *free* the horrible odour of that prepared by the old method, he time required for rendering out the oil is only twelve s, instead of six months. A few drops of nitric ether is to destroy the disagreeable smell of rancid oil, and pre- oil also from becoming rancid. When the oil is heated, arate the alcohol, it becomes clear and bright, even when s before turbid.

ere are three classifications of seal oil: that which drains spontaneously by the pressure of the layers of the skins one over the other; that which is prepared by submitting the fat to the action of steam in hermetically-closed boilers; and that which is obtained from the residual mass submitted to a high pressure.

In 1850 the export of seal oil from Newfoundland was 6,200 tuns, valued at 180,000*l.*; in 1860 it was 5,565 tuns, valued at 166,970*l.*; in 1870, 4,982 tuns, valued at 176,472*l.*

The total value of the fish oil shipped from Newfoundland in 1870 was as follows:—

	Tuns	Value
		£
Cod oil	3,593	107,813
Do. refined	404	21,068
Seal oil	4,982	176,472
Total	8,979	305,353

A good deal is also consumed locally.

The quantity of seal oil obtained in the White Sea does not exceed 70,000 or 80,000 pouds of about 40 lbs., or the half of that obtained in the Caspian Sea. The mode of preparation practised on the coasts of the White Sea, and partially also on the Caspian Sea, is very simple. After removing the layer of blubber which adheres to the skin, it is exposed in casks or vats to the heat of the sun, which dissolves out the oil of first quality. The residue is heated in cauldrons with a little water. There is only one factory, not far from Astracan (that of M. Sapojnikow), where the preparation of the oil on a large scale is carried on by steam. This establishment alone can furnish more than 100,000 pouds of oil. The seals killed in autumn and winter have the oil rendered out forthwith without the necessity of first salting the skins; but in the hot seasons this step is rendered necessary, and a great pit is prepared, capable of holding 50,000 skins.

Repeated and careful experiments in rendering out seal fat show the relative produce of pure oil obtained from the different varieties to be as follows in one barrel:—

		Oil	Residue
	lbs.	gals.	lbs.
Old harp in prime, barrel of fat (*Phoca Grœnlandica*)	288	22½	73
Young harp in prime, barrel	225	22	52
Young Hood in prime (*Stemmatopus cristatus*) ..	230	21	80
Beadlemer in prime (a year old Hood)	246	21½	103

In Russia it is found that a poud or 40 lbs. of the fat of the *Delphinapterus leucas*, Pall., yields about 32 lbs. of oil, while that of the seal only gives 30 of blubber. Of the blubber itself, the walrus or morse averages from 10 to 28 pouds; the *Delphinapterus*, 15 to 25. Of the different species of seals, the *Cystophora cristata*, 9 pouds; the *Phoca Grœnlandica*, 4 to 6; the *Phoca annellata*, 3 lbs.; and the young white skin seals 1½ poud, or about 60 lbs.

In 1869 the fisheries of the St. Lawrence River produced:—

53,811	gallons of	seal oil,	valued at	80	cents.
373	,,	whale oil	,,	80	,,
2,029	,,	porpoise oil	,,	60	,,
103,018	,,	cod oil	,,	50	,,

Nova Scotia in the same year shipped 32,895 gals. fish oil, and New Brunswick 565 gallons.

Porpoise Oil.—The extraction of the oil of the white porpoise, or *Beluga catodon*, and of the black porpoise, constitutes an important industry in the district of Quebec, on the St. Lawrence River. This oil is inodorous, and gives a brilliant light: it is said to be superior to any other for light-houses because it does not coagulate even in the most intense cold, and its durability renders it invaluable for greasing leather and oiling machinery, which it preserves from injury by friction. Porpoises (*Delphinus phocæna*) are caught in large numbers in the Little Belt, Denmark, where 1,100 to 2,000 are frequently obtained. The bottle-nose, or black fish (*Delphinus globiceps*, Cuv.) is also caught. A part of the blubber is preserved for domestic use, and the rest, heated, furnishes a fine oil: about a barrel is yielded by each fish.

The fishing for the porpoise is carried on off the coast of Trebizond; it is taken in nets, and also shot. It yields upwards of 700,000 lbs. of oil per annum, a portion of which is consumed by the lower classes for light, and the rest finds a market at Constantinople. Sprats are also pressed for oil there.

In Russia, among the accessory products obtained from various species of fish, oil is one of the principal, amounting in value to about half-a-million of roubles. This oil has three different uses—for medicine, for food, and for industrial purposes. Its source or origin is also threefold, according to the part of the fish in which it is chiefly concentrated. In some species, as, for example, in the cod, it is obtained exclusively from the liver; in others, as in the "saudre," the fat surrounds the intestines, the rest of the body in these fish never being fat; but in the larger number of species, as the herring, the salmon, and the siluroids, it penetrates all the frame. According to these differences in the distribution of the fat in the body of the fish, as well as the use to which the oil is to be applied, the mode of extraction varies. The cod-liver oil for medicinal use is extracted from the livers cut into pieces while they are still fresh, and submitted to the action of heat in a steam bath. This method has only been introduced of late years on the coast of Lapland, on the initiation of the Minister of Works of Russia, who offered rewards to those who followed the better method pursued in Norway, to which publicity was given. The invitation was readily responded to, and from one fisherman alone the Government buys 15,000 lbs. to 20,000 lbs. of cod-liver oil for use in the hospitals. The fish oil which is intended for food is obtained principally from the fat which surrounds the intestines of different species of sturgeon and the "sandre;" these are heaped together, washed, and melted by heat. This oil is added to caviare, which of itself is not considered sufficiently rich in fat, and is also used at the seat of production, in place of vegetable oil, by the workmen on fast days.

Very good medicinal cod-liver oil is now made at St. Pierre, Newfoundland, by the French, and it forms a considerable article of commerce, its production having been encouraged by the French Academy of Medicine, who state the brown, pale, and bleached oils made there will compete favourably with the products of the Norwegian and English factories. That made in April, May, and June is the best, the livers being then leaner; later, when they are fat, the oil is not considered so good in a therapeutic point of view.

I have noticed the following mode suggested of making cod-liver oil palatable:—Take equal parts of ground coffee and bone-black, as used by sugar refiners, mix them in ten times their combined weight of cod-liver oil, and digest for half-an-hour at a temperature of about 130° Fahr.; then place the mass on a filter and drain the oil off, and you will have its nauseous taste changed into a pleasant coffee flavour. If the notion is correct that coffee is an antidote of iodine, and as the latter is one of the active ingredients of cod-liver oil, it may be well to let the patient use some iodine preparation at the same time, or to add a little iodine syrup to the deodorised cod-liver oil.

In Norway the cod fish at the early part of the season are rich in liver, so that from 250 to 300 of the net-caught fish yield a barrel of liver, while 50 to 100 more fish taken on lines would be required. As the season advances the fish may become perceptibly poorer, from 400 to 450 being required to fill a barrel, while on the sea-board or western side of the Lofoden Islands from 600 to 700 livers are requisite. On the whole, therefore, it may be assumed that an average number of 450 livers are required to the barrel.

The total produce of cod liver oil from the Norwegian fisheries in 1869 was estimated at 19,000 barrels—200 barrels were prepared as medicinal cod liver oil. Fresh livers for medicinal oil fetched from 27*s.* to 31*s.* per barrel, old livers from 22*s.* to 26*s.* The catch of each boat varies from eight to twenty barrels of liver.

From the coast of Norway the average export of fish oil from 1851 to 1855 was 52,900 tuns, and from 1856 to 1860 59,617 tuns per annum.

The produce of the French cod fishery imported in 1860—which was a fair average of the five years previous—was as follows: Cod oil, 2,050,846 kilogrammes; cod oil, not purified, 284,649 kilogrammes. From St. Pierre and Miquelon about 500,000 kilogrammes of cod oil are shipped annually.

In the United States a large quantity of fish oil is made from the menhaden (*Alosa menhaden*). Long Island, Connecticut and Rhode Island produced in 1870 about 1,400,000 gallons, and the business in the State of Maine is also large. Six factories in Long Island use up every week about 2,000,000 fish. The manufactories are nearly all worked on different plans. Some use large tanks, in which the fish are placed, and into which steam is forced. A portion of the oil is extracted, and coming on the surface of the water, is skimmed off; the water is then drained away, and the refuse is pressed by hydraulic presses or powerful levers. In another mode of working used by one manufactory, the fish are placed in a large iron cylinder, similar to a boiler, and steam is let in at a given pressure, while the cylinder is made to rotate by a steam-engine. The fish are steamed from twelve to fifteen minutes, then turned out, and subjected to hydraulic pressure, which, of course, extracts oil and water together. This runs through pipes into tanks, where the oil rises to the surface, and is taken off. A thousand fish yield on an average about thirteen or fourteen gallons of oil, though this depends largely on the season, and the good or bad condition of the fish. The uses to which this oil is put are very numerous. It is good for table purposes, and, when properly prepared, the best kind is extensively used under the name of "olive" oil. It is a good paint oil: much of the linseed oil sold in America has a large amount of menhaden oil mixed with it. It cannot, however, be used for lubrication, owing to the rapidity with which it absorbs oxygen and "gums."

From the ool-a-chan, or houlican, a small transparent fish like a smelt, the Indians of Vancouver obtain an excellent oil, which is used for the same purposes as cod liver oil, and with as much, if not greater, benefit. The oil when cold is of th consistence of thick cream, white in colour, with but little odour, and by no means unpleasant to the taste: in fact, those who use it very quickly acquire a partiality for it. The Indians make large quantities every season, and with them it supplies th place of butter. They cannot live without it, and it forms great article of trade. They prefer it rancid. It is a notorious fact that the Indians are subject to spitting of blood and consumption, but still live to a great age. How much has th oolachan oil to do with the prolongation of their days?

The houlican is somewhat larger than the sprat, and is so full of oil that it is said that those caught in the north wi burn like a candle. The oil is obtained by merely immersing the fish in a small quantity of water and applying heat. Th oil is then skimmed off, and when properly filtered is a very pellucid oil of a delicate pale yellow colour.

Among the fish oils, and other oils, locally obtained or me with in the East, are, at

Madras. Karahmanoo oil, from *Polynemus plebeius* and *P. uronemus*; skate oil, seriuei oil (shark liver).

Bohet fish liver oil, oil from the loggerhead turtle (*Caou dioacea*, Esch.).

Patna. Porpoise oil.

Calcutta. Fish maw oil; Joree and Seephoo oil.

In the Indian Archipelago. Muria ekam fish oil.

On the Western and Malabar coasts an oil is prepared which is supplied to the hospitals for the use of the troops: this, i many cases, is obtained from the liver of the skate or ray, sa fish, cat fish, seer and white shark indiscriminately. Fro analysis and experiments, it has been found to equal in i medicinal properties the best cod-liver oil, but from its disagre able taste and odour it could never supersede that oil. A Kurrachee, large quantities of fish liver oil are prepared, but is not so well made as at Malabar and Calicut.

(*To be continued.*)

Provincial Reports.

LEICESTER.

THE LEICESTER CHEMISTS' ASSISTANTS' ASSOCIATION.

The half-yearly report of the above society has been issu dated February 17, and reports good work. With 34 me bers, among whom the association finds its own profes 55 classes have been held, and three lectures on scient subjects have been delivered by outside friends. Most of chemists of the town are honorary members, and aid the ass tion with their subscriptions. This, combined with car financial management, enables the treasurer to report a bala in hand of 8*l.* 9*s.* 3*d.* The following are thanked for their tributions towards the museum and laboratory:—Messrs. Bar Squire & Co.; Cox, Gould & Co.; Maw, Son & Thomp oward & Son; Wright, Sellers & Layman, Kilner others (London); Messrs. Southall, Son & Dymond (Birmingm); and Messrs. Richardson & Co. (Leicester). *Fortes -tuna juvat.*

GLASGOW.

SUPPER TO MR. ARCHIBALD PATERSON.

NUMBER of the friends of Mr. A. Paterson entertained him supper in the Waverly Hotel, Sauchiehall Street, on Friday euing, March 6, on the occasion of his leaving the firm of W. R. Hatrick & Co., wholesale druggists, to commence business his own account in the neighbouring burgh of Govan. Dr. M. Robertson occupied the chair, Mr. James L. Hatrick ting as croupier. After supper the usual loyal and patriotic asts were given from the chair and heartily responded to, Mr. T. Dun replying for the Volunteers. The Chairman afterards, in an appropriate address, in the course of which he rered to the long connection Mr. Paterson had had with the drug siness in Glasgow, and the great interest he had taken in all vements that had sprung up for the advancement of the de, not the least of which was the early closing movement. then presented Mr. Paterson with an address and purse of ereigns in the name of a large number of subscribers, and posed the toast of the evening—"Mr. Paterson's Health"—ich was drunk with enthusiasm. Mr. Paterson, on rising reply, was received with loud applause. He referred chiefly he changes that had come over the business since he joined s a humble apprentice thirty years ago, referring particuy to the advantages of the Pharmacy Act. He cordially nked them for their kindness to him, which was little exted by him, but would be all the more esteemed. The other sts were "The Drug Trade," proposed by the croupier, and nowledged by Mr. J. M. Fairlie; "The Glasgow Chemists' Druggists' Association," proposed by Dr. Moffat and nowledged by Mr. J. A. Clarke, secretary; "The Medical fession," proposed by Mr. J. L. Hatrick, and acknowledged Dr. Thomas Drayden Moffat; "The Ladies," proposed by Mr. herland, and acknowledged by Mr. Dun; "The Chairman," Mr. Paterson; and "The Croupier," by Mr. J. McMillan. evening was spent in a most pleasant manner.

ASGOW CHEMISTS' AND DRUGGISTS' ASSOCIATION.

Session 1873–74.

fifth General Meeting of the Association was held in rson's University, on Wednesday, February 18, 1873, Mr. Currie, President, in the chair.

he minutes of the previous meeting having been confirmed, ecretary, Mr. J. A. Clarke, made a short statement in ection with the late festival, in which he said that, owing e illness of the treasurer, an exact financial account could e given.

apology for absence from Mr. Kinnimont was then read, which Mr. John Hunter proposed the following motion:—at the members of this Association subscribe, say 1*s.* each, hat we ask the Pharmaceutical Society for a grant of 5*l.*, hat the money so obtained should be used for the purchase microscope for the use of members of the Association."

veral members spoke in connection with the motion, some om disapproved of asking the Pharmaceutical Society for all a sum as 5*l.*, and suggested that the amount should be up by subscribing a little more than was stated.

Chairman thought that a subscription ought to be started library as well as for a microscope, and asked Mr. Hunter would embody that in his motion.

Hunter then withdrew the motion just given, and substithe following:—"That a committee be formed for the se of canvassing the various districts of the city for subons for the purchase of a microscope, and also for founding ary."

motion was seconded and carried.

heet of paper being handed round, the members subscribed amount of 5*l.*, although the meeting was very small.

nbers of Committee were then appointed, after which the g dissolved.

Medical Gleanings.

THE General Medical Council, through the liberal consideration of Mr. Lowe (!), is to be located henceforth in the building formerly occupied by the College of Chemistry in Oxford Street. The Council has heretofore been homeless, and has been indebted for a roof over its occasional assemblies in London to the kindness of the Dental Society in Soho Square.

⁂

Mrs. Garrett-Anderson is to be proposed next week as a Fellow of the Obstetrical Society of London. The following signatures are attached to her nomination paper, recommending her from personal knowledge of her fitness: "Edward John Tilt, Robert Barnes, J. Hall Davis, Henry Oldham, J. Braxton Hicks, W. S. Playfair, W. O. Priestley, Graily Hewitt, J. H. Aveling, T. Spencer Wells, C. H. F. Routh, Jonathan Hutchinson." Thus the application of the first female graduate of medicine to be admitted to some of the privileges of scientific intercourse is supported by the President of the Obstetrical Society, and by the obstetric physicians of Guy's, King's College, St. Thomas's, University, Middlesex, and other hospitals.

⁂

The district health officers of New York came before their chief lately for examination. One was asked whether a family suffering from small-pox had had any care. He replied, "Yes, sir; they had highjinnicks (hygienics); they doctored themselves." This seemed to tickle the fancy of the president, who used the word for the rest as a test of stupidity. Most of them wisely confessed their ignorance; but one, rushing in with proverbial eagerness, said a portion of his district was badly affected with "highjinnicks," Being asked to describe the characteristics of highjinnicks, he said it meant a bad smell, arising from dirty water. A charming example, that gentleman, of the candidate examiners not unfrequently meet with, to whom there is nothing mysterious on the earth below, or in the heavens above, or in the waters under the earth.

⁂

There is an old theory that nothing in creation is without its value, and M. Bertillon has endeavoured to prove that even children are not quite unmitigated evils. In a paper which he recently laid before the Paris Academy of Medicine, he stated that in a million married persons without children there is an average of 175 convicts yearly; while, in the same number with children, there are but 109. In a million childless married men, 470 commit suicide annually; while, in an equal number with children, only 205 make away with themselves. Among married women the proportion was 157 to 45; widowers with children, 526; without children, 1,004; widows with children, 104; without, 238.

⁂

A curious lawsuit was recently tried in a New Hampshire court. A widower brought suit for damages, to the amount of 5,000 dollars, against a dentist who etherised his late wife, and extracted more teeth than she meant to part with. It seemed to have been a blunder on the part of the dentist, and the jury, apparently being in doubt how far a husband suffered such injury from the loss of a jaw power on the part of the wife as could be compensated in damages, brought in a nominal verdict for the plaintiff.

⁂

The *Lancet* and some other journals, when the stock alarmist cries fail, have been in the habit of occasionally seeking relief in an anti-sewing-machine wail. In the *Philadelphia Medical and Surgical Reporter* we find some common-sense conclusions on this subject credited to Dr. Parker, in a paper read by him before the State Medical Society of Virginia, at Staunton, on the subject of sewing machines and their effect on the health of women. He considers: First. That fatigue is not disease, and that there is no reason to conclude that the use of the muscles employed in machine work for a reasonable time is injurious. Second. That the machine may be used for four or five hours daily in a family, by a lady in ordinary health, without injury. Third. That the damage to health in the factory is due to the hygienic conditions under which the work is done, and the natural delicacy of some of the operatives unfitting them for long-continued labour of any kind. Fourth. That the sewing-machine is a great boon to womankind, increasing her compensation, protecting her sight, and in the family lessening her labours.

⁂

A party giving the initials "M.B." writes to the *British Medical Journal* thus: "Sir, A young woman in this neighbourhood in an advanced stage of consumption is pronounced by the homœopath who is attending her to have typhoid fever, thereby causing great alarm to her neighbours and friends. Am I justified in seeing her at the urgent request of her employers in the absence of the homœopath, and giving my opinion as to the nature of the case?" To which query the oracle laconically responds, "Yes." It will probably be of no interest to any one to know, but it will considerably relieve our minds to say, that had M.B. consulted us in this matter, we should have used the biggest N and O in our stock of type to respond to him, and we should also have illuminated him with the explanatory remark that a lunatic who could not decide a question of ordinary humanity without the assistance of a London editor might fairly be presumed to be incompetent to meddle with the delicate constitution of a consumptive patient.

⁂

On February 19 a grand celebration was held at Vienna of the 70th birthday of Dr. Carl V. Rokitansky, the eminent *savant* and professor of pathological anatomy in that city. Cordial congratulations were presented to him from the Court, from the University, from city and country, from home and abroad, and from nearly all the medical corporations of Austria. The General Society of Apothecaries gave him on the occasion the diploma of honorary membership.

PATENTS

The following list has been compiled expressly for the CHEMIST AND DRUGGIST by L. de Fontainemoreau & Co., Patent Agents, 4 South Street, Finsbury, London; 10 Rue de la Fidélité, Paris; and 33 Rue des Minimes, Brussels.]

Provisional Protection for six months has been granted for the following:—

4031. P. Hubert the younger, and V. Boissel, both of Bordeaux, France. An improved method of stoppering flasks, bottles, and other vessels. Dated December 5, 1873.

77. J. Fottrell, of Dame Street, Dublin, manager of a public company. Improvements in artificial stone pipes and tubes, and in the coating or lining thereof, to render them suitable for the conduct of alkaline liquids and acid products from chemical, manure, and gas works, for sewage, saline liquids, and gas. Dated January 7, 1874.

97. H. H. Murdoch, of London. Improvements in the process of obtaining potash from the "yolk" of wood and from the residuum of the distillation of beetroot juice or of molasses, and in apparatus for the same, which improvements are also applicable to the recovery of soda, and from the lyes of paper pulp. Dated January 7, 1874.

147. A. A. Deiss, of 46 Fish Street Hill. Improvements in the extraction of quinine from bark. Dated January 10, 1874.

165. R. S. Newall and H. Bowman, of the Washington Chemical Works, Newcastle-on-Tyne. Improvements in the method of condensing muriatic acid, gas, and other fumes. Dated January 13, 1874.

173. W. Black, of Hedworth, near South Shields, and D. Hill, of East Jarrow, South Shields, both of Durham. Improvements in the manufacture of soda in revolving furnaces. Dated January 13, 1874.

200. G. Archbold, of Spittal, Berwick-on-Tweed, doctor of science. Improvements in the treatment of substances containing alumina, so as to render them more suitable for the production of aluminous compounds. Dated January 15, 1874.

211. F. H. Smith, doctor of medicine, of Lewisham, Kent. Improvements in the manufacture of tape plasters or bandages, and in mounting the same upon reels or holders. Dated January 16, 1874.

227. A. Abrahams, of St. Peter's Park. An improved mode of apparatus for producing the evaporation of perfumery and other fluids. Dated January 17, 1874.

224. G. Smith, of Newcastle, Northumberland, chemist. Improvements in the manufacture of bichromate of potash. Dated January 17, 1874.

283. H. Y. D. Scott, of Ealing, Major-General, C.B., and J. B. Spence, of Manchester, merchant. Improvements in the treatment of sewage and ammoniacal liquids. Dated January 22, 1874.

297. J. Mel. Smith, of New York, U.S. A new medicinal compound and plasters made therewith. Dated January 23, 1874.

376. J. Richards, of Clifton Lodge, near Preston, Lancaster, chemist. Improvements in the manufacture of bicarbonate of soda. Dated January 29, 1874.

406. G. Read, of Leicester, mineral water manufacturer. Improvements in stoppers for bottles to contain aërated liquids. Dated February 2, 1874.

425. C. Lowe, of Redditch, Lancaster, manufacturing chemist. Improvements in the separation and utilisation of certain mixed chemical products. Dated February 3, 1874.

433. E. G. Brewer, of London. The incineration of mixed vegetable substances from wools or woollen fabrics by the application manufacture of chloride or chlorate salts, preferably of zinc, magnesium, and aluminium, applicable to unbleached and dyed or coloured materials. Dated February 3, 1874.

418. J. Hargreaves, chemist, and T. Robinson, ironfounder, both of Widnes, Lancaster. Improvements in and connected with the manufacture of sulphates of soda and potassa, and in apparatus or appliances employed therein. Dated February 4, 1874.

456. C. Watterson, of Vickers Street, Miles Platting, near Manchester, manufacturing chemist. Improvements in the manufacture of t several oleates of potash, soda, and ammonia, commonly kno under the name of soluble oil, and applicable in the process of finishing printed calicoes and silk goods and other cotton and silk dyed goods, and velvets. Dated February 4, 1874.

497. L. Rose, of 41 Mitchell Street, Leith, Edinburgh, lime juice merchant, An improved stopper for bottles for containing gases or gases combined with liquids, such as aërated beverages, whereby an improved mode of filling, stoppering, and opening such bottles can be effected. Dated February 7, 1874.

519. C. H. Touaillon, of Paris, civil engineer. Improvements in apparatus for stopping teeth. Dated February 10, 1874.

595. J. H. Johnson, of London. Improvements in the production salicylic acid and of the isomeric and homologous acids. Da February 17, 1874.

Letters Patent have been issued for the following:—

2608. A. A. Croll and D. C. Dalgairns, both of 10 Coleman Street, ci engineers. Improvements in the treatment of sulphur ores. Dated August 1, 1873.

2790. W. Crookes, of Mornington Road, Regent's Park. Improvements the treatment of waste or refuse animal or nitrogenous ma for the purpose of producing fertilising substances or artif manures. Dated August 23, 1873.

2920. J. J. Perry, of Red Lion Square. Improvements in the manufa of stoppers for bottles and other articles. Dated September 1873.

3446. J. Dentith, of Manchester, Manufacturing Chemist. Improvem in producing or preparing indigo blue dye. Dated October 1873.

4153. W. H. O'Shea, of 47 Beaufort Gardens. Improvements in extraction of sulphur from sulphur ores, and in the purificatio sulphur. Dated December 17, 1873.

4164. A. R. Arrott, of St. Helen's, Lancaster, chemist. Improvements the manufacture of hydrochloric acid. Dated December 18, 1873.

4268. H. Codd, of Grove Lane, Camberwell, and F. Foster, of 23 For Street, Shepherdess Walk. Improvements in constructing stopping bottles. Dated December 29, 1873.

Specifications published during the month:—

Postage. 1d. each extra.

1873.

1701. W. R. Maguire. Water filter. 6d.
1741. R. S. Newall. Manufacture of magnesia. 10d.
1868. J. R. Thompson. Instruments for sex marking, castrating, &c. 6
1922. W. R. Lake. Generating vapour from bi-sulphate of carbon. 8d.
1939. E. D. Risque. Bottles for aërated liquids. 8d.
1976. S. & T. Kay. Stoppers for bottles. 10d.
2126. B. J. B. Mills. Waterproof gum. 4d.
2152. H. L. McAvoy. Carburetting air. 10d.
2256. A. R. Arrott. Manufacture of soda and chlorine. 4d.
2278. S. Dunn. Liquid for destroying animal life. 4d.
2314. W. Blundell. Apparatus for irrigating and sponging wounds. 4d.
2361. J. B. H. Howarth. Treating natural phosphates. 4d.
2838. C. D. Abel. Production of soda and potash. 4d.

NOTES OF NOVELTIES

TRANSPARENT PAPER.

, **patent** has been granted in Germany for a kind of paper ith the following advantages:—It is transparent, can be ritten on quite readily either with ink or pencil, and the design : writing can afterwards be washed off without injuring the iper.

To prepare it, ordinary writing paper is first saturated with enzine, then, before the benzine has had time to evaporate it is pped into a drying varnish composed as stated below, or the rnish is applied with a brush or a sponge.

This is the formula for the varnish :—

Linseed Oil (boiled and decolourised) ..	20	parts by weight.
Lead Filings	1	,, ,,
Oxide of Zinc	5	,, ,,
Venice Turpentine	½	,, ,,

ix and boil for 8 hours; afterwards, when cool, shake, and d:—

White Copal Resin..	5 parts.
Sandarac	⅓ ,,

The paper, when finished, is said to be useful to young stunts in learning to form their letters, and for many other rposes.

PULMONIC CANDLES.

ie candles introduced by Messrs. J. C. & J. Field, of mbeth, under the above title, are calculated, we believe, not ly to sell well, but to prove of substantial benefit to those no use them. The execution of the idea has been as excellent its conception was ingenious. Certain aromatic, resinous, and lsamic substances, benzoin and styrax chiefly, it would seem, ve been combined with the candles, and during the burning substances, in the form of vapour, are slowly diffused through apartment. The odour is agreeable to anyone, but it is thing in a marked degree to asthmatic sufferers. Chemists uld do well to take up the sale of these candles.

PATENT POULTICE BAGS.

. **Broad**, of Hornsey Rise, introduces to the trade, through ssrs. S. Maw, Son & Thompson, some waterproof bags, of ious sizes, adapted for poultices or wet compresses. One of these bags is of waterproof cloth; the other, which is inded to be the side applied to the affected part of the body, is muslin or lawn fabric. The poultice or wet compress is put the bag, and by this means several practical advantages ecially as regards cleanliness and efficiency, are secured. The erproof back prevents evaporation, and consequently ensures g-continued warmth, at the same time preventing any soiling he linen. Mr. Broad has patented these bags, but they are plied at a very moderate price. An average-sized one (six ies by five inches) is intended to sell at sixpence.

A NEW AERATED WATER.

ong the aërated waters manufactured by Mr. Hogg, of ion Place, Hyde Park Square, is one of a new character, ch has already secured some attention from the medical fession. It is a bromo-citrate of lithia water, and offers a sant method for the administration of that compound. Hogg's medicinal waters are very favourably known for aro and accuracy devoted to their preparation.

APNEUMATIC WATERS.

Messrs. Kinmond & Co., manufacturers of the well-known Leamington Aërated Waters, eager to ensure the utmost purity of their products, have invented what they term an *apneumatic* process of preparing the water which they employ. Before charging it they collect it in silver-lined cylinders, and by pneumatic pumps exhaust it of all previously contained air or gases. Manifestly the waters thus manipulated will contain only the carbonic acid gas expressly pumped into them; and it is equally evident that an equal pressure will, by this means, indicate a larger proportion of gas. In consequence of their large sales, Messrs. Kinmond & Co. have obtained from the various railway companies the important concession of the free return of empties. They state that last July they sent out 451 tons of goods, at a carriage cost of 532*l.* 10*s.*

INDIA-RUBBER GUM BRUSHES.

A **new** gum brush, introduced for druggists' sale, has been patented by Mr. Thompson, of Manchester, and is now sold by the sundry houses. A small wedge-shaped disc of india-rubber replaces the bristles of the ordinary brushes, and is an evident advantage, inasmuch as there is no annoyance of bristles coming off and establishing themselves on the surface which it is desired to gum; and, secondly, as leaving the brush away from contact with the liquid does not ensure an adamantine hardness, as is the case with those now in use. The small-sized india-rubber brushes are for retail sale at a penny each.

HAMPSON'S SUGAR-COATED PILLS.

Of the various methods of covering pills which have been adopted by different pharmacists, none perhaps has such general advantages as the sugar-coating process. It is a covering which is very permanent, but which presents no difficulty of ready solution, as is sometimes the case with metallic or resinous coatings; but it is not so easy to manipulate with elegance, extempore, or on a small scale. Mr. Hampson, of the St. John Street Road, has established a laboratory for the purpose of producing sugar-coated pills in great variety, and some samples now before us are very perfect specimens of nasty medicines rendered as agreeable as may be. An assafœtida pill, for example, may be held in the mouth for a minute or two with as much pleasure as a sugar plum. All the specimens are shapely, and so prepared as to retain their figure. In America a large trade is done in this department of elegant pharmacy, and from the variety and moderate prices quoted in Mr. Hampson's list, we should think a good share of business may be expected in this country also.

TOOTH EXTRACTING INSTRUMENTS.

The information contained in the following paragraph will perhaps be useful to some chemists. We obtain it from the *British Journal of Dental Science*:—

Messrs. Maw & Co. have sent for our inspection two handsomely got-up cases of extracting instruments. They are of every conceivable pattern, English and American, and although they cannot rank with the highly-finished productions of Everard & Collins, they are good serviceable instruments. The enormous extent to which they have been sold shows that their quality must be good, and their low price must be a recommendation to many a young beginner. We understand, as regards the low price, which is uniform, that the makers consider that by adopting this system the smaller and more simple instruments pay for the more elaborate ones, and hence it is they are enabled to produce them at so low and uniform a rate. We are informed that if purchasers are not satisfied with the forms offered Messrs. Maw will make to any pattern that may be required.

THE CHEMIST AND DRUGGIST

COLONIAL BUILDINGS, CANNON ST., LONDON, E.C.

Subscription, 10*s.* per annum, including, at the end of each year, a handsome and valuable diary as a thirteenth number, all post free.

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Subscribers are requested to observe that the receipt of THE CHEMIST AND DRUGGIST in a *Green Wrapper* indicates that with that number the term of subscription has expired, and that no further numbers will be sent until the same has been renewed. We issue the notice very respectfully, not that we distrust our Subscribers, but simply because we find it impossible to keep an immense subscription list like that we now have, extending to almost every town in the world, in order, without an exact system like this.

FOREIGN AGENTS.

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CALCUTTA	,, Bathgate and Co.
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DUNEDIN	,, Kempthorne, Prosser, and Co.
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MONTREAL	,, Evans, Mercer, and Co.
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NEW YORK	Mr. P. M. Sherwood, 117 John Street.
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SAN FRANCISCO ..	Messrs. Bancroft and Co.

Terms for Advertisements over the Leaders may be obtained on application to the Publisher

WE beg to inform our foreign subscribers that the partially unstitched condition in which they receive this journal is in accordance with a regulation of the English Post-office. In common with our contemporaries, to all of whom the same law applies, we are totally ignorant of the purpose of this vexatious rule. We have in vain protested privately against a regulation which compels us to appear before our readers somewhat untidily; and now we feel it due to ourselves to make this public explanation.

DOMESTIC FILTRATION.

"WITH regard to the Silicated Carbon Filters, I have made many experiments upon them, and have been astonished at the energy and rapidity of their action. I passed through a small Filter of this make some of the worst description of water supplied by the London Water Companies, and found it, after filtration, to have become as pure as the very best London water. My experiments show that the Filter exercises a decomposing action—a chemical action—on the Organic Impurities in Drinking Water. I have no doubt that water, which is dangerous from the Organic Matter contained in it, becomes *safe* on passing through the Silicated Carbon Filter. A point of some importance, shown by my experiments, is that a Second Filtration still further improves the quality of Drinking Water. After being in use for a considerable period, Filters lose their power and require renovation. I have found that the passage of a little Hot Water through the Silicated Carbon Filter, and afterwards blowing a little air through it, restores its power."

J. ALFRED WANKLYN, M.R.C.S., London,
Formerly Professor of Chemistry in the London Institution;
Joint Author of a Book on Water Analysis, and of the
Ammonia Process.

POROUS BATTERY CELLS
OF SUPERIOR QUALITY.
PATENT PLUMBAGO CRUCIBLE COMPANY,
Sole Makers of Morgan's Patent Crucibles,
BATTERSEA WORKS, LONDON, S.W.

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OR
CONCENTRATED COCOA.

THE Purity and Excellence of this Cocoa is obtaining for it an increasing demand.

Sold by most respectable Chemists in 1*s.*, 2*s.*, 3*s.* 9*d.*, and 7*s.* 6*d.* tins.

To be obtained through the Wholesale Houses, or direct from the Proprietor,

J. M. RENDALL,
28 Queen Street, Exeter.

NOTICE OF REMOVAL.

DR. RIDGE'S PATENT FOOD FOR INFANTS AND INVALIDS.—The Proprietors beg to announce their REMOVAL from Bermondsey to their newly-erected premises, the Roy Patent Food Mills, Kingsland, London, where all communications should be addressed.

West End Office—30 Regent St., Waterloo Place, London.

NOTICE OF REMOVAL.

MESSRS. VAN DUZER & RICHARDS beg to inform their Correspondents that they have REMOVED from 266 High Holborn to their entirely New and spacious Premises, Nos. 114 and 116 SOUTHAMPTON ROW, RUSSELL SQUARE.

Messrs. V. D. & R. will be pleased to forward a Price List of their Proprietary Articles upon receipt of business card and address. Their Li includes Mrs. S. A. Allen's Worlds' Hair Restorer, Hagan's Magnolia Bal Zylo-Balsamum for the Hair, Powell's Rheumatic Embrocation, &c. &c.

VICHY WATER COMPANY,
27 MARGARET STREET, REGENT STREET,
LONDON.
General Depôt for all Mineral Waters.

ENGLISH AND FOREIGN PHARMACY.

ONE of the many failings of the fallen Liberal ministry was, it appears, a too strict adherence to the principle of no-intervention in foreign policy, a principle, however, which we may rest assured will not be lightly departed from by the wi and prudent statesman who has been chosen as the successor of Earl Granville. Imperial concerns, however, are not our affair at present, and in matters pharmaceutical we feel ourselves at perfect liberty to interfere to our heart's conten And the present seems a propitious moment to take a cursory view of Continental subjects of discussion, for, as will be seen from reports in other parts of this journal, the pharmaceutist of France, Germany, and Austria are simultaneously in trouble, though on widely varying subjects. Marvellous to relate, too, our own horizon is almost clear of grievances. The Adulteration Act and the Civil Service Stores are both hopefully on the road to ruin; their foes are they of their own household. Mr. Lowe and Mr. Forster, who have vexed us in times gone by, ar emselves out in the cold: the ladies, who last year threatened , seem to have forgotten us; the Irish grievance is on the ay to a satisfactory settlement, in spite of a few petty alousies; and not even a provincial surgeon is in arms against . Surely, then, we may turn for an instant from home fairs, and see what comfort we can derive from a contemation of Gallic and Teutonic difficulties.

An observant English pharmacist cannot fail to be struck with e evident contempt with which Continental members of the aft regard the state of the profession in England. In Paris Berlin, Vienna or Rome, the *pharmacien* or the *apotheker* is ady enough with his complaints against his own condition, t let his rash British visitor venture on the patriotic experient of magnifying the system or rather absence of system which les in his native land, and a smile of pity is the nearest proach to acquiescence he is likely to secure from his foreign other. To him Great Britain is the *bête noir*, the British emist and duggist the outer barbarian of pharmacy. He may mire individual pharmacists, but he despises our trading, and, he thinks, our unprofessional propensities, with all his heart; d if he feels that he must say something to gratify his liser he will heroically set to work to compliment us on our tish Constitution, our Thames Tunnel, our Underground ilway, even on our climate, but never on our pharmacy.

t is true that our Pharmacy Act has done something to se us in foreign estimation where anything is known recting its provisions. and it should be remembered that much the contempt with which all our neighbours regard English armacy is based on theories which once had a foundation in t, but which are true of us no longer. But there still reins enough distinction between our practices and theirs to p us out of that cordial fraternity and mutual admiration h which they regard each other. The main point of differe is the absence among us of any prescribed curriculum of dy previous to examination. Such a condition is regarded h horror by French and German alike. The German *theker*, too, cannot approve of our system of free trade, and rty to charge for medicines whatever we please, or rather atever we can get. The sale of fancy soaps, perfumery, affin oil, and the thousand and one articles of a country ggist's store, would be abhorrent to his professional soul, is only submitted to by his French *confrère* to a very ted extent as a hateful and cruel necessity.

ut this question of the curriculum is undoubtedly the chief ce of our supposed inferiority. On this point it would be height of ignorance to pass a hasty opinion. The judgment experience of French and German pharmaciens are worthy he highest respect. That we are tending towards a curriculum elves is perfectly evident, and we are fully of opinion that e day its establishment will be desirable. No examinations t can be devised can ever be perfect tests of competence, and eserve and gain public confidence and esteem is a course ated both by honourable and prudent motives. But let the sting advocates of higher education look at the question ly too. Never mind the prejudices of Monsieur or Mein r; pharmacy in this country is, and we hope will always cone to be, mainly a means of gaining an honourable livelihood fortune sometimes. What has been the result of the extrant length of the school training which a French *pharmacien* German *apotheker* must needs undergo? Has it not been ake them schoolmen, rather than business men? What will sh chemists and druggists say to the astounding figures, on official authority, which show that the average annual pts of the French *pharmaciens* do not exceed four hundred ds, although there are not more than half as many of them English chemists and druggists? This, it seems, is what s a two, and sometimes a three, years' compulsory college tion. Apart from insular prejudices, we believe the English system of the utmost free trade in pharmacy has not received full justice. No doubt a very mixed class of druggists has flourished under its shadow, but at the same time it has developed a greater number of first-class businesses and first-class pharmacists than either France or Germany can boast.

The pithy letters of our Berlin correspondent keep our readers well acquainted with the pharmaceutical crisis of Germany. That philosophic empire is in a reforming mood just now, and the apotheker privilege is one of the party questions of the imperial parliament. The system of concessions must needs breed favouritism, and the Liberal party, supported by the great body of pharmaceutical assistants, aims to destroy this system. The interested proprietors have only the German Tories to aid them. Who will protect us from our friends? asks our correspondent, with a humorous pathos. Government interference with the petty details of the shop is a continual irritation, although it must be admitted that the apothekers bear it with exemplary patience. To an English mind, imbued with thorough confidence in the principles of free trade, the simple way of settling all these difficulties would be the entire separation of pharmacy "from State patronage and control." But no German pharmaceutist dreams of this solution. For our own part, from a pharmaceutical point of view, we have a far higher opinion of the substantial character of German pharmacy than to imagine it would all fall to pieces if the Government scaffolding were removed; and from a public point of view we fail to see why the nation should be specially protected from the guile of its chemists, any more than from that of its grocers or its tailors.

The melancholy Jeremiad which the Hofrath Hlasiwetz has delivered to the apothekers of Vienna concerns pharmacy generally no less than that of Austria in particular. His prophetic soul sees but little hope for pharmaceutists, whose future—or rather, as he says, whose end—is to be simply the position of medicine-mongers. He takes a rather original, but not altogether an incorrect, view of the tendency of that system of "elegant pharmacy" on the progress of which we have been accustomed to congratulate ourselves. Even now, he says, the pharmaceutist scarcely has occasion to employ the scientific knowledge he has acquired, and soon he will only have to buy and sell little parcels of medicines ready dosed and prepared. The learned Hofrath's mistake appears to us to rest here: that he regards pharmaceutists as mere machines, with a scientific wheel included in their construction. Times change, it is true, but then they who have ability for something better than merely hewing wood and drawing water change with them; and it seems to us that a man with a scientific power which he cannot apply unless some outside force turns the handle is but little better than a superseded machine. The moral of all these random observations is that the most useful as well as the most successful man is he who has learned how to help himself; and this quality, we maintain, English pharmacy develops more thoroughly than do the loudly-vaunted systems which prevail on the European continent.

THE CIVIL SERVICE SUPPLY ASSOCIATION.

WE had to publish our last number a day earlier than usual, or we should have been able to announce the result of the important ballot in Queen Victoria Street, to which we referred, and which closed on the 13th ultimo. It may be remembered that some time ago it was proposed that the profits of the Civil Service Supply Association should be divided amongst the shareholders, instead of being applied, as hitherto, to reducing the prices of articles sold at the stores. This was not to be done at once, as an existing Act of Parliament would have prevented any such course of proceeding; but it was to be effected in this way: It was proposed by a Mr. John "That the profits should each year be banked to the credit of the shareholders, to be paid to their executors or administrators in case of death." It was also moved by the same gentleman, "That the sum of 85,118*l*. 11*s*. 8*d*., being the amount of the net profits accumulated up to August 31, 1873, do form the guarantee fund of the association, but shall, nevertheless, be employed for carrying on the business of the association as at present:" as as well as a third resolution to the following effect, viz., "That the number of shares in force at any one time shall not exceed 4,500." Against these propositions there was very great opposition, a large number of the managing committee declaring that, should such be carried, they would at once resign the positions held by them. They urged that they attacked the very principles of co-operation. They considered that the first shareholders had no right to limit the number of members as proposed, and they showed that the effect of any resolution which should cause profits to be divided would be to make the shareholders anxious to increase the prices of the articles supplied, in order that the profit returns should be as large as possible, and that these profits would be mainly taken from the 15,000 ticket-holders, who had no right to vote, and would have no right to any share in the distribution. It was further shown that, for the small payment which the shareholders already upon the roll had made, each one would be able to secure for his widow or nominee 153*l*., whether he should die to-morrow or fifty years hence, that every one of the original number of 4,500 shareholders replacing the present 4,500 individuals could likewise secure 68*l*., and so on to this extent in perpetuity; and that the whole of the 85,000*l*. or 90,000*l*. invested in the business would still be untouched. However, all the three resolutions were carried, and the result has been that several gentlemen of note have retired from the committee of management of the association, and very many of the ticket-holders have announced that they will withdraw from membership.

This, it seems to us, is assuredly "the beginning of the end." There is no question now that the civil servants are conducting a big shop; we can hardly presume that they themselves will raise any quibble about it, especially as so many of their quondam associates have so unmistakably displayed their opinions. Tradesmen have not been quite idle at the recent elections, and there is influence now in the House of Commons against, as well as for, "the service." It is questionable whether the Government will take any initiative steps, though they have good grounds. Public opinion has recently manifested itself rather more decidedly than formerly against the stores, and co-operation is no longer a safe horse to run in the race for public favour.

The style and title will probably linger with us for a long time, but, as a matter of fact, co-operation is dead at the spot where its success has been the most marked, and we have another illustration of the failure of the communistic principle, which has never yet succeeded in establishing itself under the present conditions of human society.

THE ADULTERATION OF FOOD ACT.

THE *Times* says that the Adulteration of Food Act *may* be so worked as to become a source of grievous injury to innocent persons. We not only fully endorse the statement, but will go farther, and safely, as we feel, assert that it has been frequently worked in such a manner as to have this undesirable end. We have only to remind our readers of the "citrate of magnesia" and "sweet spirit of nitre" cases as a justification of our opinion. A case, however, has occurred recently, which, so far as conflicting scientific testimony and acrimony on the part of at least one of the disputants are concerned, is simply unrivalled. The case was tried at the Edgware Petty Sessions, and under it a baker was accused of adulterating his bread with 40 grains of alum to the four-pound loaf. The evidence for this rested on a certificate from Dr. Redwood, public analyst for the county. At the first hearing of the case the charge against the baker was positively denied, an adjournment of the case was asked for, and also an investigation by another analyst. This was granted, and it was arranged that portions of the bread to which Dr. Redwood's certificate referred should be placed in the hands of Mr. Wanklyn, public analyst for Buckinghamshire, on behalf of the baker, while the Chairman of Quarter Sessions, according to Dr. Redwood's statement, proposed Dr. Hardwicke as the third analyst. Unfortunately, Dr. Hardwicke's testimony was not put forward in a regular manner, and was in consequence rejected by the Bench. It remained therefore to decide the case on the basis of the conflicting evidence offered by Dr. Redwood and Mr. Wanklyn, the first maintaining the 40 grains of alum per four pound loaf, the second denying any such adulteration whatever. This resulted in the dismissal of the case; but the defendant's costs, although applied for, were not allowed. Dr. Redwood holds that this was a failure of a good case due to the want of legal assistance in preparing and presenting the evidence for the prosecution. In point of fact, Dr. Redwood complains that Dr. Hardwicke's testimony should have been rendered abortive.

The matter having been so far settled, the dispute has been carried on in the press, Mr. Wanklyn stating that Dr. Redwood's analysis was quite untrustworthy, while Dr. Redwood upholds the accuracy of his result, which he confirms by quoting the results of two subsequent analyses made by himself, and also the result obtained by Dr. Hardwicke.

To throw discredit on the opposing evidence Mr. Wanklyn rather injudiciously asserted, in a letter to *The Times*, "that Dr. Hardwicke is not capable of performing the most delicate and difficult analyses;" and also, "he was in my laboratory as a student of food analysis a few months ago, and I have repeatedly warned him against undertaking the detection of alum in bread." To rebut this Dr. Hardwicke throws some discredit on Mr. Wanklyn's truthfulness by an emphatic assertion of the want of truth in Mr. Wanklyn's statement. It appears also that Mr. Wanklyn had testified to the ability possessed by Dr. Hardwicke to perform the duties of public analyst in a "satisfactory manner" at the time the latter gentleman was a candidate before the vestry of Paddington. So far as circumstantial evidence of this kind goes, the light thrown on the matter does not redound to the glorification of Mr. Wanklyn.

On the other hand, the "battle of the processes" does not seem so far to have had a satisfactory issue. If we leave Dr. Hardwicke's results out of the question it remains equally difficult to decide between the accuracy of one or other of two experienced chemical analysts like Dr. Redwood and Mr. Wanklyn. We venture to express the belief that one or other is aware of the inaccuracy of his statement, as we cannot believe that an experienced analyst, being fully apprised of the importance of his work, could possibly make any mistake as to the detection of alum, or, at all events, of alumina, in the ash from a sample of bread. It is all very well for Mr. Wanklyn to invent, as Dr. Redwood terms it, an "imaginary" objection, and a statement of such technicalities may be made to look very plausible to non-professional persons. It is perfectly true that alumina and silica may be dissolved in appreciable quantities from the surface of porcelain vessels under particular circumstances, but it is hardly probable that Dr. Redwood, who must have had a good deal of experience with porcelain vessels ild allow such a possibility to interfere with the accuracy of work. Rejecting such an assumption of gross error on Dr. wood's part, the question as to his accuracy becomes much plified—Was he mistaken in finding alumina at all; or, on other hand, was he mistaken in his estimate of the ntity? The first supposition involves a blunder even more s than that respecting the porcelain vessels, and having iew Dr. Redwood's experience, we are inclined to discard In a word, it involves confusion between alumina and phate of calcium, of which the veriest tyro in food lysis would not be guilty. The second supposition supposes fusion between alumina and phosphate of alumina, which ht happen as an oversight. But here we should only meet h an error as to quantity, not as to the fact of the presence more or less alumina; and supposing that Dr. Redwood le this less grievous blunder, no verification would be rded of Mr. Wanklyn's result, which pointed to the complete ence of alumina. We must leave our readers to conclude themselves, simply reminding them that an experienced lyst would be perfectly awake to the precautions necessary e observed when searching for alum in bread, as the whole ect has been ventilated over and over again. Moreover, we lly think that Dr. Rodwood would be satisfied with any- ng less than the separation and identification of chemically e alumina, which is the only satisfactory means of esta- hing the presence of alum.

etting the personal dispute on one side, the broader question o the working of the Adulteration Act is not presented in a sfactory light. Even granting that injustice may be done to innocent tradesman through the blunder of an experienced fessional gentleman, what must be the result when the work ends on inexperienced hands, which is too often the case? s not a case like that narrated above point to the working the Adulteration Act in its present shape as a crying evil, ' harassing" mischief? Is it not clear that until the whole the present appointments of public analysts have been over- led and the incompetent men removed, until the whole of present working arrangements are re-organised and proper cks provided against unintentional and malicious blundering, il some central authority shall be appointed and some scheme protection and relief found for unjustly persecuted trades- n, that the working of the Adulteration Act should be pended?

FASTIDIOUS DISPENSING.

HE discussion which followed the reading of Mr. W. Murton-Holmes's paper on iodide of iron, at the evening meeting of Pharmaceutical Society on February 4, evoked some very traordinary expressions of opinion respecting the liberty of dispenser to exercise his own judgment in dealing with a ysician's prescription. Mr. Holmes had found that in pre- ring a mixture containing iodide of potassium, iodide of iron, d syrup, the appearance of the solution differed very con- erably, according to the order in which the ingredients were xed. If the potassium salt was added to the iodide of iron, precipitate was formed, but if the syrup was intermediately roduced, no such decomposition ensued, a perfectly clear xture being obtained. A more satisfactory result, Mr. Holmes d observed, was effected by first neutralising the iodide of assium with a little citric acid. Upon this suggestion a con- versy arose as to the principle involved in any departure by dispenser from the strict letter of a prescription, some of speakers—amongst whom we were surprised to find the esident—maintaining that it is a pharmacist's bounden duty be not only blind to the faults of a prescriber, but even, as in this case, to introduce an error rather than rely upon his own skill and judgment in obviating it.

The particular point in question was this. Iodide of potassium, as most of our readers are aware, is a salt seldom or never met with commercially in a state of absolute purity, traces, at least, of free alkali being nearly always present. Nor is this adulteration, if adulteration it be, wholly condemnable. Apart from considerations of the difficulty and expense of manufacturing a perfectly neutral compound, it is found that the pure salt is exceedingly unstable. Indeed, so prone is it to decomposition that, unless rigidly excluded from the air, the crystals almost immediately acquire a yellow colour, owing to absorption of oxygen and carbon dioxide, and liberation of a corresponding amount of iodine. When, however, a certain degree of alkalinity has been established, there occurs, as Mr. Groves has recently pointed out, no further change. The manufacturer, therefore, in preparing the salt, allows a small quantity of potassium carbonate to be present in the solution of the iodide. He thus not only obtains much larger and more perfect crystals, but has obviated their tendency to decompose, and no sensible pharmacist will cavil at the addition. But what is the consequence of the introduction of this slight impurity? A serious one, certainly, from a chemical point of view, since it has imparted alkalinity to a salt which should be strictly neutral, and hence given it the power of decomposing a great number of substances in common medicinal use, preparations of iron for instance, in which it causes the precipitation of insoluble basic compounds. Now comes the question, is a pharmacist, in dispensing a prescription, justified in applying his knowledge of chemistry to rectify a source of error, or is he, as Dr. Redwood and the President of the Pharmaceutical Society allege, to pin his faith to the prescription, like a Mussulman to his Koran, and at the same time to look upon the compounds of the "Pharmacopœia," if they but answer to the tests given in that inspired volume, as nothing less than inviolable, which it would be heinous to modify, and sacrilege to think of purifying. Professor Attfield, with that incisive perception which always sends him straight to the heart of an argument, quickly turned the tables upon these very "conscientious" gentlemen by bringing their own oracle as a witness against them. "In the 'Pharmacopœia,'" said the Professor, "the conscientious reader will find, after the words Potassii Iodidum, KI. If this formula be regarded as the definition of iodide of potassium, the salt should contain nothing but potassium and iodine, but if it had a feeble alkaline reaction, that property would show that it contained something beyond K and I, and the intelligent dispenser would consider that he should add something to rectify that alkalinity. He might hesitate between hydriodic acid, citric acid, or other acid, but if he had a conscientious desire to make the compound neutral, he would add an acid of some kind." We cannot conceive the objection which any individual, endowed with ordinary common sense, could advance against this correction. Nay, we will go further, and assert that a dispenser would signally fail in his duty if he neglected in this case to take the precaution of neutralising his iodide of potassium. The doctor certainly never intended to furnish the patient with basic iodide of iron, and therefore, as Mr. Rimington remarked, "the correction of the error fell within the domain of the chemist, and in correcting it he would be carrying out rather than altering the intention of the physician."

So much for the particular point in dispute: a few words now as to the general question which it involves. The line of argument adopted by Professor Redwood seems to us marvellous. Here, day after day, are we adjured to raise the standard of scientific education. We compel our students to go through a thorough course of technical training; we urge them, above all things, to become accurate and able chemists; we oncourage them with the assurance that skilled pharmacy will soon have a monopoly in the market, and that the unprofessional druggist will soon be as extinct as a mastodon. And yet, no sooner does an opportunity present itself for the educated pharmacist to draw upon his knowledge than he is sternly warned to be very careful as to what he is about. "Go and consult the physician," says the president. "Don't attempt to interpret the 'Pharmacopœia,'" cries Dr. Redwood. Will these gentlemen allow us to put to them this simple question—How, taking the whole sphere of his business, can a pharmacist so properly and effectively prove the value of careful training as in exercising his knowledge of chemistry in dispensing a physician's prescription? We cast no slur whatever upon medical men when we say that, as a rule, they know scarcely anything whatever of chemical reactions. Clinical practice, and that of the dissecting room, are of such paramount importance to the medical student that his laboratory experience must of necessity be very limited. Besides, in his after life, the large demands of physiology and therapeutics naturally crowd out the (to him) less serious claims of chemistry. But it is just at this point that the educated pharmacist steps in, for there is no single branch of his calling in which chemistry plays no part. And we feel confident that, as time goes on, and our ranks are recruited from intelligent and trustworthy students, physicians will feel that they can rely more and more upon the discretion and judgment of the dispenser. In a prescription, as in every other document, far more depends upon the accurate carrying out of the spirit of the writer's directions than in any amount of servile obedience to its letter. It is a fact—apparently often forgotten—that the customer who sends the prescription to be dispensed has as much claim upon a pharmacist's abilities as the doctor who writes it; and those who are in the habit of sending out from their establishments dirty mixtures, damp powders, and pasty pills, may perhaps find, by the steady decline of their business, that the public are beginning to appreciate and appropriate the blessings of "elegant pharmacy."

MR. T. N. R. MORSON.

It is our sad duty this month to record the loss of one of the most eminent representatives and one of the best friends of British pharmacy. Mr. T. N. R. Morson died on the 3rd of this month at the age of 73. Known by name to all engaged in kindred pursuits, both in this and other countries, Mr. Morson was widely known, too, personally, and where pharmacists congregated, no one was more heartily welcomed, nor more sincerely respected, than the gentleman who has just been taken from us. His kindly smile and shrewd but genial manner won for him an affection far outside the inner circle of his more intimate friends, and will leave behind a memory which will not readily pass away.

Nearly four years ago (May 1870) we had the pleasure of publishing the portrait, with a biographical sketch, of Mr. Morson. At that moment he had just retired from the Pharmaceutical Council, of which he had been a member for many years, and over which he had at two periods presided. In some sense he closed his public career with this retirement; but it is only quite recently that his great activity and energy have been impaired, and his last illness was very short.

Mr. Morson was born at Stratford-le-Bow, and at the age of fourteen was apprenticed to a retired army-surgeon, who had a retail shop in the old Fleet Market, now known as Farringdon Street. His father and mother died while he was still young, and quite unaided he fought his way up to the honourable position he ultimately gained. During his apprenticeship he cultivated his taste for chemistry with rare assiduity and success, and after its completion he spent several years in Paris in the establishment of a M. Planche. Returning to London, he established himself as a chemist and druggist in the same old shop where he had served his apprenticeship, and there laid the foundations of the business which he afterwards made so successful.

An intimate acquaintance with foreign pharmacy and a sound knowledge of scientific chemistry were far rarer accompaniments to the chemist and druggist fifty years ago than they are now, and Mr. Morson made good use of his exceptional advantages these respects. It is good evidence of his chemical and commercial skill, that in his laboratory in the Old Fleet Market British sulphate of quinine and British morphia were first manufactured, not as mere chemical curiosities, but on a scale large enough to supply the wholesale houses. This kind of business extended, and Mr. Morson became, as he ever afterwards remained, one of the most noted among English chemical manufacturers. He moved his business to Southampton Row, and, when creosote was first introduced into medicine, he establish works for the manufacture of that product at Hornsey Ri which we believe are still the only English factory of creosote.

Twenty-eight years' service on the Pharmaceutical Council, during six of which he was president, comprised his official lif But his services are not to be reckoned only by years; his excellent judgment and certain good sense were among the ma supports of the Society in its infancy, and his scientific attainments made him one of its brightest ornaments. His retirement, when he had about reached the age of 70, was characteristic of the man. There was no trace of decay about h mental powers; but the step was prompted by a fine sense of delicacy which long and active years had in nowise blunted. A year or two afterwards he was urged to accept the presidency of the British Pharmaceutical Conference; but this honour he declined, fearing lest his age might interfere with the fit discharge of the duties of the post.

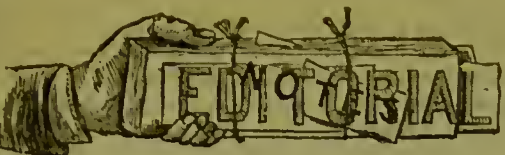
All that it falls to our lot to record is the outside career of the man, marked by unswerving rectitude and unfailing diligence; Much more could be said of his home life, which it is not our province to enter. But "that which should accompany old age, as honour, love, obedience, troops of friends," were his abundantly. Pharmacy has lost a reverenced member; but that private circle mourns for a beloved head.

Last Saturday, March 7, the funeral took place at Highgate Cemetery, and was attended by a number of representative pharmacists, and many were the words of affectionate respect which were uttered to his memory, by those who had long been associated with him, on that solemn occasion.

A NEW cloth is said to be manufactured in France lately from the feathers of ducks and other fowls. Less than two pound of feathers make a square metre of cloth, which is much lighte and warmer than that made from wool, and has the additiona advantage of being impermeable to wet.

LIME-WATER IN STINGS OF BEES AND WASPS.—M. Dauvern states (*L'Union Med.*, Oct. 25), as the result of numerous trials that the pain and suffering caused by these may be immediatel assuaged by the application of lime-water—a remedy which may always be prepared at once by the aid of a little quicklim and a glass of water.

CHEMICAL APPOINTMENT.—The Japanese Government hav through their Legation in London, appointed Mr. R. Routledge B.Sc., F.C.S., to the Professorship of Chemistry and Physics i the Imperial College at Yeddo. Mr. Routledge studied scienc at the Owens College, Manchester, where he had Dr. Roscoe fo his instructor in chemistry, and took a distinguished place i the Honours Examinations of the University of London i 1869 and 1870.



THE PHILADELPHIA DRUG EXCHANGE.

have before us a report of the thirteenth annual meeting of Philadelphia Drug Exchange. This influential, though un- ntatious, association is a model of efficient combination. It esents 112 firms, mostly wholesale druggists, of Phila- phia. The main purpose of this society seems to be to secure best commercial and technical information by united effort, to share it among all the members. But the association beyond merely selfish objects, and has often been able to rt its influence over the legislature in matters pertaining to drug trade generally. Last summer the popular notion in United States seemed to be the getting up of free excursions poor children, a scheme which readily commends itself to y heart not purely selfish. The Philadelphia Drug Ex- nge had the distinguished honour of organising the largest ursion of this kind, they having conveyed to Rockland and ertained for a day 1,815 persons. They claim that this was scribed for and all arranged within three hours. Mr. xander H. Jones, of the firm of Powers & Weightman, has n elected President of the Exchange for the current year.

PHARMACEUTICAL AMBITION IN GERMANY.

URIOUS agitation has lately been raised in some of the man pharmaceutical periodicals relative to the titles under ch assistants are known in that language. The designations ilfe (assistant) and *lehrling* (apprentice), it seems, are not sidered sufficiently honourable by the gentlemen who bear m, apparently for the reason that they are similarly em- yed in all other businesses. "Assistant" and "éléve" are gested as more genteel, but our Berlin correspondent, who rms us of this manifestation of dignity, thinks the native nes will prove strong enough to resist this novel Anglo- nch invasion.

AN ADULTERATION ACT FOR GERMANY.

s to be hoped, for the sake of foreign *confrères*, that neigh- uring governments will be content to regard British trades- n as the *corpus vile* for experiments with Adulteration Acts. en we arrive at some legislation that works with a moderate ree of efficiency and fairness it will be good time for them begin. But the German rulers are showing signs of restless- s in this respect. Our Berlin correspondent writes:—"At a beginning has been made in Germany in the examination rticles of food in regard to adulterations. The testing of nking water is in many towns obligatory on the local autho- es. The apothekers are largely engaged in this work. In Berlin Apothecaries' Association lectures on the subject, strated with experiments, have been delivered, and other s have followed the lead. Beer is at present regularly d in Berlin, but unfortunately the investigation is confined uch samples as the brewers think fit to send. These are rally found to be good. Powdered spices have come in for od share of attention lately. A food museum, like that at h Kensington, would be very welcome in Berlin, so that lo might become acquainted with the arts of the adulte- rs."

SOUTH LONDON SCHOOL OF PHARMACY.

On February 27 the presentation of the medals awarded for the course just expired were presented. Mr. Baxter, the secretary, with a few well-chosen remarks, handed the medals to the successful students, as follow:—Major division, bronze medal, Mr. Pank; minor division, silver medal, Mr. Knights; bronze medal, Mr. White. At the close of the business Messrs. Woods and Fowler, two of the senior students, waited upon and presented Dr. Muter with an illuminated address, conveying their best wishes on this, his birthday, and asked his acceptance of a gold watch as a token of their esteem. The watch, which is a magnificent specimen of Messrs. Dent's workmanship, valued at 50 guineas, bears the following inscription:—"Presented by 150 students of the South London School of Pharmacy to Dr. John Muter, F.C.S., as a mark of their appreciation of his great ability as a teacher, Feb. 27, 1874." Dr. Muter having returned thanks in an eloquent and feeling speech, the proceedings closed amidst loud and prolonged cheering. We believe this is the second occasion that Dr. Muter has received such a gratifying mark of respect from the students under his training.

THE INTERNATIONAL PHARMACEUTICAL CONGRESS.

There is to be a so-called International Pharmaceutical Congress at St. Petersburgh next August, and the English Pharmaceutical Society has been invited to send delegates, as they did once before. The subject has been before the council at its last two meetings and is again postponed for further consideration. Doubtless the council has better means than we can have of knowing the importance of this congress in an international sense. To us its *raison d'être* is mysterious; the benefits it has hitherto conferred on pharmacy are, at least, indirect and intangible; and most assuredly the questions which are up for discussion at the forthcoming assembly are not of very immediate moment to British chemists and druggists. They are thus enumerated:—1. How far the personal responsibility of the pharmaceutist extends in executing the duties of his calling. 2. What would be the best mode of organising the Apothecaries' Committee of Revision. 3. Is it necessary that the pharmaceutical professorship should be held by a pharmaceutist? 4. Has not the time arrived for instituting an international pharmacopœia? There is something almost comic in the idea of a number of middle-aged sober-minded German, French, and English pharmaceutists travelling all the way to St. Petersburgh for the purpose of solemnly discussing such questions as these. To make the picture correct it is necessary to imagine a fair representation of the various nations at this congress, or its claim to the title "international" would be equally absurd. Of course there remains the well-worn theory about the promotion of good feeling, and so forth, but the preservation of European peace is not one of the objects of the Pharmaceutical Society. So we fail to see the force of Mr. Hampson's plea that "it is desirable to send a representative for the sake of showing a national friendly spirit." Mr. Schacht spoke more to the point as to the *problematical good* likely to accrue from the congress, but we demur to his views more than to those of Mr. Hampson. Taking, he said, the general desirability of such a thing as being admitted, it was a question whether they could afford the expense. The impression conveyed is neither creditable to English pharmacy, nor true of it. We can quite easily afford the expense, and the only question ought to be if the object be desirable. We most strongly advocate the exhibition of a national friendly spirit in the foreign policy of the Pharmaceutical Council; but we are not aware that this calls for purposeless and effusive demonstrations.

CRYSTALLISED GLYCERINE.

Among the chemical curiosities of the Vienna Exhibition were some samples of crystallized glycerine, exhibited by Messrs. Sargs, Sons & Co., of the Liesing Works, near Vienna. A note on this by Mr. A. H. Mason, F.C.S., was read lately before the Liverpool Chemists' Association, and is interesting. Mr. Mason said :—

In a paper which I had the honour to read before you last session on Glycerine, I stated, taking high authority, that glycerine was uncrystallizable. This statement I must correct, and in substantiation call your attention to the specimen of crystallized glycerine which is presented to your museum. My attention was first drawn to this in a report published in the "Chemist and Druggist," July, 1873, on the articles exhibited in the Vienna Exhibition, which stated that "Sarg exhibited several glass vessels filled with some beautiful crystals of glycerine." The statement added—"Like phenoline, benzoline, and many other organic combinations, glycerine only crystallizes in a state of perfect purity, and the minutest foreign matter deprives it of this property; once in a solid state it will only melt in a high summer temperature. Under certain conditions the crystals attain a size which allows their angles to be measured." I have obtained a specimen of this glycerine from Messrs. Schneider & Co., of London, which was supplied in a narrow-mouthed bottle, labelled, "*Krystallisirtes Glycerin. Patent F. A. Sarg's, Sohn & Co.*" The result of my examination convincedme that absolute purity was not necessary to bring the specimen to the crystalline form in which it now exists. Being very hygroscopic, atmospheric influence of mean temperature is quite sufficient to liquefy it, and, once liquid, exposure to intense cold will not cause it to congeal. The peculiar mousey odour is present. Contact with calcic oxalate produces slight turpidity, and heated with sulphuric acid and absolute alcohol there is discolouration. The method of production, being patented, is a secret; it commands a fancy price. Its usefulness is questionable; as a chemical curiosity it is interesting.

REVIEWS

ARMSTRONG'S ORGANIC CHEMISTRY.*

That branch of Science which, for want of a better name, we call Organic Chemistry, is in a condition to claim a larger amount of attention than it appeared to merit not many years ago. As long as the vital force doctrine stood in the way we could not recognise the continuity of those chemical forces which were exclusively studied within the comparatively narrow limits of inorganic nature. But thanks to the labours of the many great chemists of the last half-century, a stock of material has been collected and reduced to something like order by the exact methods of our own day. The student can now pass from the study of elementary matter to the complex products of nature's laboratory, by gradations as imperceptible as those which link together the highest and the lowest organisms known to biological science, in such a manner as to render the great principle of evolution all but an accepted fact. Considering the scientific and industrial importance of the great discoveries recently made in this branch of chemistry, and the peculiar interest which must attach to a subject so closely associated with the mystery of life, we must expect that organic chemistry will prove increasingly attractive as a most promising field for research. We therefore welcome the appearance of this volume: it will help to fill up an important gap in the chemist's library, already overstocked with introductory text-books on inorganic chemistry, whilst there is scarcely an elementary work on the chemistry of the carbon compounds suitable for beginners.

The volume opens with an account of the methods by which the composition of carbon compounds is determined. The author then explains the various formulæ employed; and after describing the methods adopted in the determination of vapour density, he explains the use that is made of these determinations, and the nature of polymerism, metamerism, and isomerism. The second chapter is devoted to the classification of carbon compounds. In this chapter the hydrocarbons, alcohols, ethers, aldehydes, ketones, &c., are defined in a cle r and simple manner, such as is calculated to give the student a very fair idea of the relationships of the principal groups o carbon compounds. The next chapter treats on the genera action of re-agents on carbon compounds, a subject of great importance, and well deserving a special chapter. The remainder, and by far the greater part, of the work is occupied with the chemistry of the individual members of the grea groups. In keeping with the systematic plan of the work, ther are but few substances described which are not sufficiently well known to admit of a definite place being assigned to them. Interesting and important bodies, however, the relationships which are imperfectly understood, such as the carbohydrates, are not omitted. In the treatment of this matter the auth displays a thorough knowledge of the subject, and appears understand perfectly the requirements of the student. It probable that the real value of a work of this sort can only be determined by a practical test. It must await the judgment of the teacher and of the student before it can take its prope place in our educational literature. We feel assured, however that a work possessing, as this does, the merits of an excellen text-book, is certain to prove one of the best of the valuab series to which it belongs.

HOMŒOPATHY DISGUISED.*

Messrs. Alexander G. Burness, M.B., C.M.Univ. Aberdeen, an F.J. Mavor, M.R.C.V.S., President of the Central Veterinary Socie of London, are not satisfied with the present empiric system treating the diseases either of men or animals, and they a desirous of placing the practice of medicine on a more scientif basis. Both holding coincident opinions, derived, it may b presumed from independent experimental investigations, they have concluded to publish their faith and doctrine in a han some volume bearing their names jointly, and which can be bought for half a guinea. The title page fairly summaris their teaching:—"The specific action of drugs *on the healt system*; an index to their therapeutic value, as deduced from experiments on man and animals." But the idea is more elaborately expressed at the commencement of Chap. II. There we read—

> In the preceding chapter we alluded to the specific action of various substances on the *healthy* animal system. We have now to show that the same substance that influenced special tracts or parts of the body in their healt condition will influence the same special parts or tracts in their diseased condition, and will so act upon them as to restore them to their norm condition. But we must remember, when we wish to use any substance t restore the deranged function of any parts or tracts, by its specific influence over them, that doses *considerably* less than would be sufficient to produ the physiological effects of the special substance will serve, by effecting some alteration in the nature or quality of the vital action.
>
> When we refer to using a substance for therapeutic purposes in a *physi logical* dose, such a dose is meant as is given in works on materia medica as the medicinal dose. But, as stated already, when a substance is used f its specific action on the diseased parts or tracts, the dose must be *consider ably* below the last-mentioned dose. The exact quantity of each substance to be given for this purpose is a point to be determined yet by experiment. The rule, however, is to give it in such a dose as will not produce physiological effects, and thus aggravate the disease.

We quote these passages, not with the object of disputing them, but simply that our readers may discover, if they can wherein the authors have enunciated anything novel. For ourselves we acknowledge that we are fairly puzzled. "Our theory" is paraded with much display in the introductory page of this book, and when it is at last exhibited we find it to b purely and simply the framework of the homœopathic systen of medicine. Surely the authors know this: reserve has no been one of the faults of our homœopathic friends, and yet from beginning to end of this book there does not occur the slightes of an acknowledgment of Hahnemannian inspiration; but uthors write with an apparently honest unconsciousness they have ever been forestalled in their theories.

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* *Introduction to the Study of Organic Chemistry* By Henry E. Armstrong, Ph.D., F.C.S. One of a series of Text-Books of Science, adapted for the use of artizans and students in public and other schools. London: Longmans, Green, & Co.

* "The Specific Action of Drugs. By Alex. G. Burness, M.B., an F. J. Mavor, M.R.C.V.S. London: Baillière, Tindal and Cox.

e quotations we have given must surely indicate to any one knows anything of homœopathic literature that Messrs. ess and Mavor are publishing the principles summed up in maxim, *similia similibus curantur*: as a further proof of we will only extract one other paragraph, which is to be d in their first chapter. It is printed in italics, and seems intended as the foundation stone of the edifice now pro-d. We are told—

> *hile a toxic dose will effect such changes in a part as to unfit it for any action, a lesser dose, applied to a diseased part, will, by removing that of combination of the elements which excited diseased action, enable the al process of nutrition to restore the healthy constitution.*

e see no reason why these gentlemen should not become apostles of any dogma they believe to be true; but it is er late in the day to profess any originality in a notion ch has been hammered at with excessive vigour by a con-rable host of medical writers from now back to Hahnemann, which, opponents say, can even be traced to the writings of en, Celsus, and Hippocrates.

e by no means wish to imply that the contents of the me are devoid of value. We think the authors take a onal view of medical treatment, and place it before their ders with ability and force. It may be that they have purely eschewed any reference to homœopathy in order to secure ore impartial consideration of its principles. It may be, that they are not anxious to be classed with the believers nfinitesimal doses, an absurdity which has got tacked on to œopathy pure and simple. But however this may be, we k they would have done better had they defined their ition more distinctly, and not placed their borrowed theories ward as though they were original.

The plan adopted by the authors is to take each strong medi-e in alphabetical turn, to give us its physiological action, n its specific action, afterwards its therapeutic uses (*a*) in ysiological, *i.e.*, in full doses, and (*b*) in restorative, *i.e.*, in œopathic doses, and finally, in many cases, a treatise on the edy from a veterinary point of view. Obviously, this plan ps largely to fill up the book, which might have been much re condensed if the object had been simply to bring forward proposed system. For example, to occupy two or three ges with a detailed description of the physiological effects and cific action of arsenious acid is quite inexcusable in a book ich does not profess to be a manual of medicines or poisons; d a similar remark would apply to nearly every medicine ated of. There are many instances indicative of laborious tension of pages, or else of want of skill in concentrating, as instance, at the end of Chapter I., where a paragraph is ded to summarise the contents of the chapter to follow, while apter II. commences with a summary of the contents of its edecessor. The authors scarcely ever commit themselves to finite statements as to what they mean by "restorative doses," yond the very vague indications we have already quoted, so at their experiments lose nearly all their value. In fact, the ok ought to have been either much more carefully elaborated, else presented *en brochure*, as an essay to enforce the really sirable lesson that a medicine may have another and perhaps ite a different therapeutic value than that generally attributed it, according to the dose administered.

Some of the experiments on horses recorded by Mr. Mavor ill be useful to veterinary practitioners, and good treatises on is branch of medical art are not too abundant. But even here series of notes seem to have been inserted with but little other rpose than to help fill up. Take the following for example:— he writer aims to prove the effect of certain remedies on the mperature of the blood. He therefore gives us a detailed story of several cases. The following is one:—

(*a*) To a gray mare suffering from abscess in the pectoral region, due to vound, was given on the

					Deg.
16th,	at	5 p.m.,	$\frac{1}{4}$ gr. atropiæ sulphatis,	temperature	$104\frac{2}{5}$
17th,	,,	12 noon		,,	$103\frac{1}{5}$
,,	,,	2 p.m.,	$\frac{1}{4}$ gr. atropiæ sulphatis	,,	$104\frac{2}{5}$
,,	,,	4 p.m.		,,	$104\frac{2}{5}$
,,	,,	8.15 p.m.		,,	$103\frac{3}{5}$
18th,	,,	11 a.m.,	$\frac{1}{4}$ gr. atropiæ sulphatis		
,,	,,	1.50 p.m.		,,	104
,,	,,	6.30 p.m.		,,	$103\frac{1}{4}$
19th,	,,	11 a.m.		,,	103
20th,	,,	12 a.m.		,,	102
21st,	,,	10.30 a.m.		,,	$101\frac{2}{5}$
30th,	,,	10 a.m.	horse well	,,	$99\frac{3}{4}$

What we find it difficult to understand is what part the sulphate of atropia took in the recovery of the horse. From the narrative given above it seems as if the animal only began to get better when the medicine was discontinued.

On the whole, we can scarcely admit that the few suggestive remarks and experiments which are scattered through the work are sufficient to justify its publication, or to counterbalance the dead weight of old matter and old theories which encumber its pages.

THE BIRTH OF CHEMISTRY.*

We have but one fault to find with this handsome little volume. If it had just one more chapter it would be as perfect a specimen of condensed history as we could wish to have. The fitting completion, in our opinion, would have been a slight sketch of the work of Lavoisier and a few of his nearest chemical contemporaries.

In his first chapter the author refuses to admit M. Adolphe Wurtz's patriotic claim that "chemistry is a French science—instituted by Lavoisier." Of course, if taken as a literal statement of dry fact, such an assertion is preposterous, and M. Wurtz would be the last to make it in such a sense. But, in his preface, Mr. Rodwell himself designates Lavoisier, Priestley, Scheele, and a few others "the fathers of modern chemistry," and if his book, taken in connection with what we know of modern chemical discovery, suggests one idea more than another, it is this very proposition of M. Wurtz, which is so clearly denied. The truth is that Mr. Rodwell has given us a narrative of the *gestation* of chemistry, but has left off just before the real birth has occurred. Perhaps the most correct title in connection with the metaphor for which this book is responsible that could be attributed to Lavoisier would be that of the *accoucheur* of chemistry. Much that has been claimed for him may be successfully resisted; many of his discoveries may have been anticipated; some of his theories may have been found insufficient, as indeed they have been found; but always and for ever the great French chemist will be recognised as the teacher *par excellence* who rescued the science from the web of fable and imagination which had obscured it, and established it on the broad and firm basis of experimental induction whereon it has since been fixed. Mr. Rodwell very righteously claims great honour for a couple of wonderfully clear-sighted Englishmen who lived more than a century before the time of Lavoisier, and who certainly deserve to be better known. These were Robert Hooke and John Mayow. The latter especially (born 1645, died 1679), who seems to have been a disciple of Hooke's, made some very remarkable experiments with reference to what we call *oxygen*, which he called *nitre-air*. He burned camphor and a candle under a glass bell over a pneumatic trough, and noting how far the water rose, came to some very just conclusions about the composition of the atmosphere. More than this, he demonstrated the connection of combustion with respiration by experiments with a mouse in a cupping glass tied over with bladder. If he had not unfortunately died so young, this true genius might very possibly have prosecuted his investigations, and antedated the birth of chemistry by a hundred years or more. But, as a matter of fact, his theories were but slightly regarded. Soon after him came Stahl, who introduced the century of phlogiston, a strange and utterly unscientific theory, agreeing well, however, with the almost universal barrenness which distinguished the eighteenth century, and which was only broken up finally by the French Revolution. What Mayow called *nitre-air* Lavoisier called *oxygen*. It would seem as if the former was the most correct designation of the two; but the persistence of the one, and the unknown sound of the other title, show well enough the incomparable difference between the influences exercised by their respective authors.

Mr. Rodwell by no means argues to the detriment of Lavoisier. Short of being its founder, he says, it would be difficult to over-rate the services he rendered to chemistry. But we do think it fairly open to question whether the birth of chemistry can be said to be described if the narrative is closed previous to Lavoisier's labours.

Any one engaged in chemical pursuits may well desire to know the past history of the science he is studying, and, as regards chemistry, Mr. Rodwell's book sketches this history charmingly. What we can know of what our ancestors knew about chemistry is not much; but it is at least quite clear that their acquaintance with the science was meagre indeed, at any rate, so far as any generally spread theories were concerned. The perfection attained by many of the ancient nations, the Greeks especially, in all the most difficult arts, contrasts strangely with the puerility of most of their notions of natural history. But it is nevertheless highly probable that in very remote times certain chemical secrets were well understood in certain families and transmitted hereditarily. These were probably the stock-in-trade of the astrologers and magicians who in the East were, and to some extent are still, as regular practitioners as bakers or butchers among ourselves. Nothing short of lunacy would have induced such men to expose their secret knowledge to the world, and so it was left for the pure theorists to have it all their own way in such treatises as were written. Mr. Rodwell gives a very interesting sketch of the Greek theories as to the nature of the elements.

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* "The Birth of Chemistry." By G. F. Rodwell, F.R.A.S., F.C.S., Science Master in Marlborough College. London: Macmillan (Nature Series).

In the following extract from the second chapter, the author traces the atomic theory back to very early times, and the quotation is a good specimen of the pleasing manner in which Mr. Rodwell has condensed his learned and extensive course of study.

> Anaxagoras of Klazomene (500 B.C.) asserted that originally all things existed in infinite disorder; before the Creation there was a chaos of mingled particles of matter, which were arranged in order by a designing intelligence, or mover of matter (νοῦς). The primitive constituents of things are not definite elements, like those of Empedokles, but are *homœomeries* (ὁμοιομέρειαι), that is, *like parts*, small particles of matter like the masses they produce when they aggregate. Thus a mass of iron is produced by the aggregation of an infinite number of iron-homœomeries brought out of the chaos by the νοῦς, which latter possesses vortical motion which enables it to separate like parts and bring them together, somewhat on the principle of gold-washing. If a dish containing substances of different relative weight, such as cork, sand, and lead shot, intimately mixed together, be caused to rotate, like particles will come together, the lead in one place, the sand in another, and this experiment will help us to realise to some extent the meaning of Anaxagoras when he assumes that the vortical motion of the νοῦς caused homœomeries to aggregate and form the world. Leukippos taught that the world is produced by the falling together of small indivisible particles or *atoms* (from ἀ and τέμνω), which are the principles of things, and which possess rapid circular motion. Demokritos (460 B.C.) extended the atomic theory of Leukippos; he contended that the principles of things are atoms and a vacuum. The atoms are invisible by reason of their smallness, indivisible by reason of their solidity, impenetrable and unalterable. They have no other qualities, neither heat, nor cold, nor colour. Atoms are infinite in number, the vacuum is infinite in magnitude. Atoms differ from each other in size, shape, and weight. They are actuated by necessity or fate (ἀνάγκη), and possess an oblique motion in the vacuum which causes atoms of like shape to collide, and group themselves together, by which means all things are formed. The vacuum is necessary, otherwise motion of the atoms would be impossible, because there would be no place to receive them. Long before the time of Demokritos an atomic theory had been proposed in India by Kanáda, the founder of the Nyaya system of philosophy, of which this theory forms the distinguishing feature. The theory of Leukippos is attributed by Possidonius to Moschus, a Phœnician. During the Middle Ages many writers made the atomic theory a prominent part of their system. Descartes adopted it in a somewhat modified form, and associated with his particles the vortical motion possessed by the homœomeries of Anaxagoras. Finally, almost in our own day, the atomic theory was introduced into chemistry by Dalton, and its introduction marked an important era in the science. At the present time the doctrine of atoms forms a principal feature in chemistry, and other branches of science find the conception most conducive to the philosophical explanation of phenomena. The definition of an atom given by Demokritos is almost as absolute and precise as that which we find in our most modern treatises. Thus the theory has endured for more than twenty-five centuries, and is likely to endure until there shall be no more science. It offers a striking example of the oneness of physical thought; the conception seems to be essential to Natural Philosophy; the most stupendous phenomena may be referred to atomic motions. S. Augustine has well said, "Deus est magnus in magnis, maximus autem in minimis."

Mr. Rodwell traces the word *chemcia* only so far back as the eleventh century, when it is to be found in the "Lexicon of Suidas," and is defined as the "preparation of gold and silver." Manuscripts professedly of more ancient date than this are somewhat brusquely rejected. Another writer (Dr. H. Carrington Bolton, in the *American Chemist*, Feb. 1874), more credulous or more laborious than Mr. Rodwell, tells us that there is an astrological manuscript in the Vatican, to which the date of 336 A.D., is assigned, in which are found the words *scientiæ chimiæ*. Readers must take their choice. But as to the origin of the word, Mr. Rodwell tells us that the theory of χῦμα as its derivation, that is a liquid, or something poured out, "is not worth a moment's notice." He accepts the general belief that it comes from *chemia*, which Plutarch says was the name given to Egypt on account of the black colour of its soil, a corresponding word in other ancient languages also signifying obscure or hidden. How is it that with all the weight of evidence and authority against them, some people, led by the *Times* newspaper, will continue to spell the English word, *chymistry?*

Mr. Rodwell does not credit the alchemists with so much service to science as is sometimes accorded to them, but the vicissitudes of the progress of true chemistry, mixed up with such a vast quantity of myth and conceit, are certainly the romantic period of its history. The thought strikes one reading this book, as well as any other historical work treati of those ages, that, in the scientific spirit at least, the Middle Ages were farther removed from our own times than were the ancestral days of ancient Egypt or Greece. Another lesson which the present age can well afford to learn is that theories however perfect they may seem, need the closest investigation before acceptation. Van Helmont, in the early part of the seventeenth century, maintained an old dogma that water was the first principle of all things. As a proof of his theory (we quote from Mr. Rodwell)—

> He took a willow which weighed five pounds, and planted it in two hundred pounds of earth, which he had previously carefully dried in an oven. The willow was frequently watered, and at the end of five years he pulled it up, and found that its weight amounted to one hundred and sixty-nine pounds and three ounces. The earth was again dried, and was found to have lost only two ounces. Thus it appeared that 164 lbs. of wood, bark roots, leaves, &c., had been produced from water alone. Hence he inferred that all vegetables are produced from water alone; not knowing, as was afterwards proved by Priestley, that a constituent of the atmosphere called carbonic acid had furnished the solid part of the tree, although, indeed, there was much water with it.

Mr. Rodwell's work is the product of scholarly investigation which, however, is pleasantly veiled under the easy diction of a ready writer. Chemists cannot fail to enjoy reading it, and those who are not chemists will be tempted to enter on the study of its mysteries if they are thus initiated into its story.

Correspondence

CO-OPERATIVE STORES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

Sir,—May I request, on my own behalf and on that of several of my *confrères*, a small space in your next issue for a few remarks on the above subject? I know, sir, that whatever some more aspiring journals (emanating from the *sanctum sanctorum* of Bloomsbury Square) may do, you, at least, will open your columns and use your influence to uphold the interests of the trade—you, at least, unhampered as you are by red-tape, will allow free speech and no favour, free criticism and no partiality—no, not even to the Pharmaceutical councillors themselves. I, for one, think it is a good thing that we have such an able "Leader of the Opposition" to keep ministerial tyranny in check.

Well, sir, about "Co-operative Stores." I presume no one will deny that if the legitimate trade has an insidious enemy gradually undermining its well-being—nay, its very existence—that enemy is the system of co-operation carried on by Her Majesty's civil and military servants, and in their wake by various other societies throughout the country, and the question which I, in common with the whole trade, should like to see answered is, "Why does the Pharmaceutical Society, which professes to watch with so jealous an eye over our interests, and to protect them with such a powerful arm, allow this formidable foe to parade himself unchallenged?"

We all know that a poor widow, with any number of fatherless children to feed, clothe and educate, cannot escape their scrutiny, but is pounced upon without the slightest compassion, even though she be carrying on her business by means of a qualified ant. With a Co-operative Society of opulent men under rnment pay and patronage the case is different: they are ed to underbuy and undersell the legitimate trade without station, and the only flimsy pretence for not interfering them is that they resort to the equally transparent device ng their qualified assistant's *name* on their labels, who, ex- n as far as lending his name (and thus co-operating with in what cannot but be called nefarious trading) and receiv- his pay at their hands—has as much to do with his partment' as the President of the Pharmaceutical Society. d hardly say that if this is lawful it would be equally law- or the first draper or grocer who chose to have a "Drug rtment" to his establishment, and, employing a qualified "keep open shop for the sale of poisons," and "for the dis- ng of the prescriptions of duly qualified medical men;" for is lawful for any number of men is lawful for one man r similar circumstances. But more than this, even if the tfied assistant beforementioned had a small interest in his rtment, just to evade the letter of the law, this would equally up the trade to outsiders generally, for then the first- r might give a qualified assistant a merely nominal interest s business, and forthwith drive his coach and four through Pharmacy Act. Is it credible, sir, that any Act of Parlia- is so framed and worded that it can be thus set at ht?

nd if so, may I ask why shall not the poor defenceless w, with her orphans to support, adopt this cunning expedient e Co-operative Stores, and bid defiance—as they do—to our nt protectors in Bloomsbury Square? Is it because she is nceless and they are defiant? or is it because of the perfect *halance* with which the trade-interests of chemists and gists are regarded by the Executive of the Pharmaceutical ety?

pologising for so long a letter, believe me, Sir,

Yours, most obediently,

JUSTITIA.

A CAUTION.

TO THE EDITOR OF THE "CHEMIST AND DRUGGIST."

IR,—I shall be greatly obliged by your giving publicity to following. A person, having the air and bearing of a tleman, is going about with a prescription, of which the owing is a copy:—

"*Captain Ward, Royal Engineers.*
℞ Fr. Ferri Sesq. ʒij
Æther Chlor. ʒiij.
Tr. Digital. ʒiij.
Aq. Puræ ℥vi.
M. A tablespoonful three times a day in a wineglass of water.
℞ Syr. Chloral Hyd. ʒj.
Pot. Bromid. ℥jv.
Aq. Anethi ℈jv.
M. A fourth part each morning.
(Signed) H. B. NONMAN."

Ie enquires how long it will take to prepare, persists in ting for it—perhaps says he is very anxious to get it ckly, his servant having omitted to pack with his traps the bottles he obtained a few hours before in a neighbouring n.

The medicine prepared, he asks the cost, when he is afraid has not so much change, and is sorry to have to ask the our of a cheque being changed. In this way he obtained on urday last at Southsea 6 guineas for one cheque, and at thampton 5 guineas for another. Both cheques purport to be wn by "C. H. Blennerhasset, Colonel, Royal Engineers," on x & Co., Craig's Court, Charing Cross, in favour of "A. C. rd, Esq., Captain, Royal Engineers," who he professes him- f to be, and endorses the cheque in the shop.

His real name is E. H. Gahan. He is a most accomplished ndler, and has forged scores of cheques on Cox & Co. (who ght to assist in bringing him to condign punishment). I saw r of them at Portsmouth Police Station yesterday. In April 72 the Leicestershire Banking Company offered 100*l*. for his prehension, and he was only discharged from prison in cember last, having suffered 18 months' imprisonment. He n Irishman. The following is a fair description of his pearance and dress on Saturday last. Height 5 ft. 7 or 8 in., m build, brown hair, light brown moustache, whiskers and rd close shaved, the roots of shaven hair being very visible; l, somewhat thin face. Wore a *brown stiff* felt hat (though t I think he often changes, leaving one behind at the hotels visits), dark paletot, slaty-coloured trousers, probably in muddy weather turned up, lay-down collar, black, long necktie, with red or crimson spots.

Professes to be in a nervous broken state of health from 5 years' service in India, from whence he says he has recently returned, is anxious to learn your opinion of the probability of his recovery, and is extremely chatty and over-polite. Probably will talk about knowing Cheltenham (where his mother really resides) and of Canada (where—at Quebec—he was a banker's clerk). Any of your readers who will secure his arrest, and send me a telegram, will confer an obligation on the public generally, and especially on

Your obedient servant,

ROB. CHIPPERFIELD.

If unfortunately any of your readers have been victimised by him, I shall be glad if they will communicate with me.

Southampton, Feb. 16, 1874.

LEGAL & MAGISTERIAL.

IS PETROLEUM A LEGITIMATE ARTICLE OF DRUGGISTS' SALE?

SUCH a question has been raised in the Court of Chancery, in the case of Edmonds *v.* Roper.

The plaintiff, Mr. Edmund Edmonds, is a solicitor, residing in Newent, who filed a bill of complaint against the defendant, Mr. Thomas Hill Roper, to restrain him (the defendant) from carrying on the business of a newsagent, photographer, and tobacconist, and from selling petroleum, benzoline, colza oil, and other dangerous and explosive materials. Mr. Glasse, Q.C., and Mr. B. P. Rogers appeared for the plaintiff; and Mr. Cotton, Q.C., and Mr. Speed appeared for defendant. The litigants stand in the relation of landlord and tenant. In March, 1869, the defendant took a lease of the plaintiff's house, situated in Church Street, Newent, for seven years, for a private dwelling-house and chemist's shop.

The Vice-Chancellor: The question is whether petroleum is not part of a chemist's business.

Mr. Cotton: We say it is.

Mr. Glasse: And we say it is not. The bill sets forth that the plaintiff being desirous of insuring the premises for 400*l*., the defendant promised to pay the extra premium on account of there being petroleum on the premises. This was in 1872, and in the year 1873 an explosion took place.

Mr. Cotton: The defendant has a properly licensed place in which to keep the petroleum, and also did not make the promise until after the accident in 1873.

Mr. Glasse said the licensed place was on the plaintiff's premises, included in the lease, and therefore precluded him from getting them insured at ordinary rates. The plaintiff gave the defendant notice that he should require extra rent, and for him (defendant) to pay the extra risk insurance. The defendant ultimately refused compliance with the demands.

The Vice-Chancellor said he should not grant an injunction on the motion. This, he said, was a small druggist's shop in the country, where one might buy almost everything. The Vice-Chancellor also intimated that the suit ought not to have been instituted, as the real matter in dispute is the sum of 13*s*. 6*d*. per annum, the amount of the extra premium, and that he did not think he should consider the case of sufficient importance to advance its hearing, but, after a little more discussion, the motion stood over until the hearing.

THE LEAMINGTON WATERS.

COURT OF CHANCERY, Jan. 22, 1874. *Kinmond* v. *Daily*.—This was a suit to obtain an injunction to prevent the defendant from describing himself as a manufacturer of soda and other aërated waters, he having sold his right to the plaintiff. The defendant did not resist the prayer of the bill, which came before Vice-Chancellor Malins, who awarded a perpetual injunction against Mr. Daily, *i.e.*, "restraining him from either solely or jointly with, or as agent or servant, for any person or persons other than the plaintiff, James Crichton Kinmond, directly or indirectly carrying on, or being engaged or concerned or interested in, the manufacture of mineral waters, and from permitting his name, or the name or style of 'J. Daily & Co.,' or any colourable imitation thereof, to be used or employed in carrying on, or in connection with, the businesses or trades sold to the plaintiff, as in the Bill in this cause mentioned, or any of them, by any person or persons other than the plaintiff, within 50 miles of the parish church of Leamington, in the county of Warwick; and that the defendant, his servants and agents, be in like manner restrained from representing the defendant to be a manufacturer of soda water, or other mineral or aërated waters at Leamington aforesaid, or within 50 miles of the parish church there. And that the defendant, his servants, and agents, be in like manner restrained from selling any soda water or other mineral or aërated waters as being of the plaintiff's manufacture, the same not being of the plaintiff's said manufacture."—This injunction carried costs.

THE LONDON OPIUM-SMOKING DEN.

A FEW years ago * we described a personal visit to the opium-smoking quarter of Bluegate Fields, and this journal was the first to identify the spot so graphically depicted by Charles Dickens in his story of "Edwin Drood." These houses have recently been made the subject of a law-suit, the plaintiff being a tailor residing at Pentonville, and the defendants the East London Railway Company.

Mr. Garth, Q.C., and Mr. M'Coan appeared for the claimant; Sir John Karslake, Q.C., and Mr. Legard represented the company.

The claimant had an interest of 18½ years in a lease of several small houses, let out at 4*s.* per week, containing two rooms, one upstairs and one down, situated in New Court, Victoria Street, formerly known as Bluegate Fields. In this court were several houses visited by opium smokers, and one contained the room engraved in "Edwin Drood." The places had been visited, as described by the claimant, by many gentlemen to see the opium smoking, and his mother, who was called, said the Prince of Wales had been to the spot to witness the opium smoking, and also other noble persons. Sir John Karslake and Mr. Garth said they had been to the locality in reference to the present inquiry. The mother of the claimant asked Sir John if he had seen the woman opposite who kept the smoking department, and he said he had not, on which she replied that he had lost a "treat." The learned counsel added that he was not disposed to go back again.

The claim on the part of Mr. Summerfield was to about 300*l.* by damage done to the small houses by the tunnelling of the company, by which he had lost a number of lodgers, who paid him 2*s.* per week for each room. Two Englishwomen, one of whom had married a Chinaman and another a "gentleman from Madras," were the only persons keeping houses in the court to which foreigners went to smoke opium. Since the operation of the railway works the houses had been much damaged and the tenants were afraid to stop in them. Even the opium smokers had declined to come on account of the condition of the place.

Sir John Karslake, who produced a photograph of the place before the railway works were commenced, submitted that very little damage had been done, and that the houses were in a bad condition before the works were begun. The company was not bound to pay for the damage to which the property had been for years exposed. On one side the expense was considerable, and his witnesses showed that from 30*l.* to 40*l.* was all that could be required for the damage done by the railway.

Mr. Garth, in reply, said he only asked reasonable compensation for the injury done, and he thought the matter might have been settled without bringing the powerful aid of Sir John Karslake on the part of the company.

The jury, who paid a personal visit to the spot, assessed the compensation at 220*l.*

PROSECUTION UNDER THE PHARMACY ACT.

ON Tuesday, February 17, at the Gainsborough Police Court, Mr. Marwood Sanderson, chemist and druggist, of Lofthouse, was summoned by Superintendent Prost for having sold a preparation of strychnine to one Louise Dixon, on December 29, without having duly recorded the same.

Mr. Buchanan, coroner, said that on December 31 last he held an inquest at Lofthouse on the body of one Louise Dixon. Evidence was given to show that death had been caused by poisoning from strychnine. A paper was found in deceased's room, bearing a label, "Sanderson's vermin destroyer," or something of that sort. This afforded a clue as to the source whence the poison had been procured, and he himself called at the defendant's shop, where the assistant said that Louise Dixon went to the shop, asking if they kept any vermin killer. He told her that they did, at the same time telling her that it was a dangerous poison. She said that it was required for some rats which came from an adjoining stable, and he then sold her the preparation. The assistant said it was customary to keep a record of the sales of poison, but the deceased woman went out of the shop before he had an opportunity of getting the poisons book duly filled up.

Defendant's assistant deposed to the accuracy of the coroner's statement, and Mr. Betell, analytical chemist of Middlesborough, said he had found that the powder contained about 15 per cent. of strychnine.

In answer to the case, defendant said he was sorry he had not been at home himself, because when he had any doubt about the intentions of people who wanted poisons, he always mixed up some spurious or harmless compound, and labelled it as the genuine article.

The Bench imposed a penalty of 5*l.* and costs.—*Middlesborough Daily Gazette.*

SULPHURIC ACID IN THE DOCKS.

AT the Liverpool Police Court, on the 11th inst., a case of some interest to shippers was decided. The question raised was whether sulphuric acid came within the meaning of the 215th section of the Dock Act as being a dangerous article. The stipendiary magistrate, on the authority of "Chambers' Encyclopædia," where it is described as oil of vitriol, decided that it did, and fined Messrs. Prescott Brothers & Co. 20*s.* and costs for sending 99 cases of sulphuric acid for shipment to the Huskisson Dock, and neglecting to specify its nature on the outside of the cases.

THE QUACK PROFESSOR.

AT the Hertford Spring Assizes on March 3, before Mr. Justice Lush, George Morris Bone, *alias* "Professor Morris," described in the calendar as a "herbalist," and by his counsel as a "quack doctor," was indicted for feloniously killing one Arthur Cooper at Hitchin.

Mr. W. A. Clark prosecuted; Mr. Woollett defended the prisoner.

The case for the prosecution was that the prisoner sold pills to the mother of the young man, for her son, containing such a quantity of arsenic that, after taking a few of them, he died with symptoms of arsenic—traces of the poison being found in the body. On the part of the defence it was denied that death arose from taking the pills or that arsenic in sufficient quantity to cause death was traced to the pills sold by the defendant, and it was also denied that even if by any accident this was the case it rendered the prisoner criminally responsible for the result.

Mr. Justice Lush, in summing up the case to the jury, told them that undoubtedly a mere mistake causing death would not necessarily render a medical practitioner liable to a charge of manslaughter; but if a person ignorant of the nature of drugs took upon himself to administer deadly drugs to other persons, and, by an excess of such a drug, caused death to the person taking his medicine, he would be liable to the charge. The question, therefore, was whether the pills sold by the prisoner did contain such a quantity of arsenic as caused the death of the deceased.

The jury found the prisoner guilty, but recommended him to mercy.

When, however, the learned Judge asked on what ground, the Foreman did not seem to know, and turned to his fellows, and then said, "Because we do not think he knew the excess there was in the quantity of arsenic."

The learned Judge said there was evidence that the prisoner sold pills containing arsenic, which had caused death; and that evidence warranted the verdict; but he did not think the circumstances called for a severe sentence, as it did not appear that he was aware of the dangerous character of the pills, which he had sold for two years. The jury, also, had recommended the prisoner to mercy, and the sentence was three months' imprisonment, with hard labour.

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* Vide THE CHEMIST AND DRUGGIST, September, 1870.

UNGENTLEMANLY CONDUCT.

rkenwell, on the 22nd ult., Mr. A. Hickey, chemist and ist, of Silver Street, Notting Hill, was summoned before irker for smoking in a carriage on the Metropolitan ly. It appeared that on the afternoon of the 29th ult. ardlin, umbrella manufacturer, of Monkwell Street, City, d a train at Aldersgate Street to go to Paddington. The ant and three other men were there smoking. The lant puffed smoke into a lady's face, when Mr. Mardlin "You might have asked permission to smoke." The lant impudently asked him how much money he had in cket, threatened to punch his head, and puffed smoke into ce as well as that of the lady. He afterwards made use of ceful language and threw the ash of his cigar on the lady's The defendant smoked all the way from Aldersgate to Street. He had evidently been drinking freely, but knew he was about. The defendant now denied having insulted ly or used the language imputed to him. Mr. Barker said fendant had reason to think himself fortunate in having wer but one charge. He ordered him to pay a fine of nd 44*s*. costs, the alternative being a month's imprison- The money was paid.

THE CHEMIST WRONG AGAIN.

Duke, married, living at Brixton, was charged, at the Court on February 16, with attempting to commit suicide ing a quantity of sugar of lead. The prisoner having few words with her husband, sent a boy to a chemist's for ison and swallowed it. A surgeon restored her, but she ppeared to be suffering from the effect of the poison. It ated that the boy who had purchased the poison was n years old. Mr. Chance said chemists should be more l in selling poison to boys. The chemist remarked that of lead was not a statutory poison and was largely used by rs. Mr. Chance said that did not alter the fact of its dangerous to sell such a thing to a lad. The prisoner, expressed great regret at what she had done, and who sed never to repeat it, was allowed to be discharged.

BANKRUPTS.

h, Francis, jun., Grove House, Fulham Road, surgeon. Feb. 13.
Daniel, Northfield, Worcestershire, late Wednesbury, Staffs., sur- n. Feb. 20.
s, Alfred, 87 Prince of Wales Road, Haverstock Hill, surgeon. b. 27.

ARRANGEMENTS OR COMPOSITIONS.

ces of first meetings have been held in *re* the following estates:—
r, Isaac, Stafford Street, Willenhall, grocer and patent medicine dor. Feb. 11.
ge, Thomas M., 26 Lilleshall Road, Clapham, late Acre Lane, Brix- n, chemist. Feb. 26.
Milbourn Goodrick, Whitmore Reans, Wolverhampton, chemist. b. 14.
, William Samuel, & Michael Alfred Reed, 14 Mincing Lane, t India and chemical brokers and agents. Feb. 23.
, Ebenezer, 32 Auckland Street, Vauxhall, cheesemonger and dairy- an. Feb. 16.
, William Samuel, 14 Mincing Lane, East India and chemical broker l agent (separate creditors). Feb. 23.
, E. J., chemist, Worcester.
ll, Joshua Edward, 130 High Street, Notting Hill, chemist. b. 26.
n, Edwin Row, 1 Morlee Place, Morlee Town, Devonport, druggist d grocer. Feb. 14.
iam, Thomas, 47 Clapham Road, mineral water manufacturer. b. 25.
ck, Albert Louis, Great Harwood, Lancashire, surgeon. Feb. 18.
ey, Thomas, Barton-on-Humber, druggist and grocer. Feb. 17.
Henry Wilson, Cleveland Square, Hyde Park, surgeon. Feb. 24.
Michael Alfred, 14 Mincing Lane, East India and chemical broker d agent (separate estate). Feb. 23.
Charles Wilson, Lewisham, surgeon. Feb. 11.
ll, William, Pendleton, Lancashire, medicine dispenser. Feb. 14.

DIVIDENDS.

homas (Liq.), Keighley, Yorkshire, 1st and final div. 6; J. Hopkinson, ghley.
ell, Thomas C. (Bkt.), Leeds. 1st div. 5/2; J. Routh, Royal In- ance Buildings, Leeds.
s. William (Liq.), St. Nicholas Street, Worcester, chemist. Div. 11*d.*; b. 27, between 10 and 5; D. Shaw, Pierpoint Street, Worcester.

PARTNERSHIPS DISSOLVED.

Anderson & Adams, 68 Grafton Street, Dublin, apothecaries. Feb. 16. Debts by Edward Anderson.
Denny & Field, Blackwater, Hants, surgeons. Feb. 18. Debts by Charles John Denny.
Ellis, R. J. & Co., Laxey, Isle of Man, and C. FitzGerald & Co., at Liverpool, manufacturers of chemicals. Nov. 30, 1869.
Fothergill & Samuel, Stockton-on-Tees, surgeon-dentists. Feb. 14, 1873. Debts by Peter W. Samuel.
Holt, John & Son, Castleford, Yorks, manufacturing chemists. Jan. 24. Debts by Alfred Holt.
Richardson, John & Co., 30 Bishopsgate Street Without, fancy soap manufacturers and perfumers. Feb. 10.
Stroud Chemical Manure Works Co., Dudbridge, Gloucestershire chemical manure manufacturers. Feb. 6. Debts by William Trinder.

Revised Terms.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of the Chemist and Druggist, and all correspondence relating to it must be addressed to the "Publisher of the Chemist and Druggist, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

FOR DISPOSAL.

A Patent Economic Gas Carburetter. 1/230

Bentley's "Botany," nearly new, 8*s.* 6*d.*, post free. 16/230.

What offers? 20 lbs. mercury. Diggle, chemist, Heywood.

"Pharmaceutical Journal," post free Monday after publication. Offers wanted. 24/229.

Burrow's Soda Water Rack, to hold 3 gross. Perfect, 35*s* Faulkner, Chemist, Notting Hill, W.

A fine Outside Lamp and Bracket. In good condition. Offers wanted. Chant, Langport, Somerset.

Twenty-five parts "Cassell's Popular Educator" (new), 10*s.* or offers. Alexander McKenzie, 89 High Street, Nairn.

Bentley's "Botany," second edition, new. Offers wanted. Southwell, 29 Long Row, Nottingham.

Upright Show Case for Counter. About 4 feet wide, good condition and cheap. Best, chemist, Darlington.

24 handsomely labelled Perfume Bottles, with ornamentally-cut spiral stoppers, 16 and 10 ounce. 30/229.

7 lbs. pot. iodid. opt., 17*s.* 6*d.* lb.; 14 lbs. gum. opii. Turc. opt., 27*s.* lb. Drury, Chemist, Southwell.

Quarter-plate camera and lens complete, cheap, 25*s.* Apply Richard Sturton, Cambridge.

Bentham's "British Flora." New, uncut, 31*s.* 6*d.* (Published 3*l.* 10*s.*) 29/229.

Quain and Wilson's Anatomical Plates. 121 large finely coloured. Uncut copy, 8*l.* 8*s.* 29/229.

Shop sugar-cutter, 10*s.* Exchange patents. Jones, chemist, Penydarran, Merthyr.

Two Sykes' Hydrometers, Air Pumps, books and sundries cheap. R. C. Mason, Bromsgrove.

For 45*l.* complete Soda Water plant, hand or power, gaswork pressure gauge, water gauge, and bottling machine new. Turkey sponge 6*s.* lb., or good exchanges. 27/230.

A complete Series of the *Pharmaceutical Journal*, from commencement. First 15 vols. bound in cloth. Perfect, clean, and cheap. Thos. D. Walker, Dresden, Staffordshire.

Six black gallon shop bottles, six 3-lb. blue ointment jars, two dozen quart rounds. J. P. Brinley, Field Head Road, Highfield, Sheffield.

Barth's nitrous oxide gas apparatus, viz., face-piece and economiser, two 45-gal. bottles and 45 gals. compressed gas, 6*l.* nett cash. Bayley, Saltaire.

Rad. Rhei., E.I., very fine, at 2*s.* 3*d.* 7 lbs. or 14 lbs. Sample ½-lb. post free for 18 stamps. Andrews, Chemist, Eastbourne.

Sheep Ointment Machine, by Gibson Stainford. Two pestles. Will kill 10 lbs. silver at once. Perfect condition. What offers? Carlton, Horncastle.

Surplus Stock of Clean and Saleable Proprietary Medicines. Purchased for cash. Send list and price required. Allen, chemist, 3 Liverpool Terrace, Canning Town, Essex.

About 4 or 5 gross second-hand 6 oz. Bottles, graduated for 4 doses, for sale, at 8*s.* per gross; or exchange for 6 oz. graduated for 6 doses. S. S., Post-office, Abingdon.

To exchange, the Second Series of "Pharmaceutical Journal," bound in half calf, and in first-class order, for First Series. Will do if well bound in cloth. 3/230.

Colossal bust Hahnemann, painted and lettered. Lignum Vitæ twine box. Cork presser. Three 16 feet mahogany fronted shelves. F. Cole, Stoke Newington.

Pill Machine, mahogany frame, brass rollers, marble slab, nearly new, cost 27*s.*; lowest price 20*s.* J. W. Jackson, Chemist, Crewe.

Bargains!—To be sold cheap, Oil Cisterns, Bottles, Tins, Scales, Casks, Glass and Earthenware Barrels, Stoves, &c. List on application. Send stamp. W. Yull, Grunsbury, Banbury.

he "Chemist and Druggist" for 1872 and 1873. What offers? Valentin's "Text Book of Practical Chemistry," 7*s.* 6*d.* A sweet-toned Violin, with silver-mounted bow, case, and mute, 3*l.* 10*s.* Warwick, chemist, Hartlepool.

A 4-grain Pill Machine (Bushby's Patent), makes 500 a minute, cost 4*l.* 10*s.* Wanted a 5-grain hand machine in part exchange. Mr. Pearson, 61 Hatton Garden, Holborn, London.

Post free. Pereira's "Materia Medica" (1865), 8*s.* 9*d.*; Thomson's "Conspectus" (1869), 3*s.* 9*d.*; Church's "Chemical Processes of British Pharmacopœia," 1*s.* 10*d.* Dunn, Shipley.

Two Treble's 42*s.* ebonised bent plate glass cases, in use about 9 months; or exchange for good mahogany show stand, with silvered glass backs and shelves. Attenburrow, Melton Mowbray.

"Pharmaceutical Journal" posted day of arrival. Can have back numbers. What offers? Also 1873; three numbers missing and four duplicates. Very cheap, 4*s.* 6*d.* Chemicus, Harbour Street, Folkestone.

Two 12-gallon Show Carboys, Cut Glass Stoppers, 1-30 in. Specie Jar; Royal Arms; about 400 Shop Bottles; Glass Cases and Fittings, various. M. P. S., 8 Frederick Place, Caledonian Road, N.

Pure carmine, 6 ozs.; pulv. cinchon., 10 lbs.; pulv. Prussian blue, 10 lbs.; gum kino, 4 lbs.; gum guaiaci, 2 lbs.; sheep fly powder, ½ cwt.; ol. absinth. ang., 8 ozs.; morph. acet., 1 oz.; morph. mur., ½ oz. 2/229.

Soda-water Machine, second-hand, in good condition and working order. Will make 200 dozen per day. With rack bottling apparatus, gun-metal condenser, and toothed wheels. Bramah pumps. All for 34*l.* N. G. Wilcocks, Back Street, Bath.

A Dentist's Lathe, by Ash. Vulcaniser, with thermometer powerful press, 3 brass flasks and rings, brushes, and corundum wheels, &c. All nearly new, and cost 10*l.* Will be sold a bargain. Apply A. Budge, 28 Union Stre Stonehouse, Plymouth.

4 × 6-gallon Show Carboys, with cut-glass pear-shape stoppers, price 17*s.* 6*d.* each; 30 × 30 oz. Shop Rounds, N.M., w gold labels; 17 W.M. ditto; 10 × 8-oz. ditto ditto 7 × 8-oz. ditto N.M.; 11 Blue Jars, with gold labels, perfect. Offers wanted. J. Day, 116 Briggate, Leeds.

Soda Water Manufacturers.—35 to 40 gross Plain Bottles, 1*l.* per gross, delivered in London. Tartaric Acid Cry by cwt. keg. Bottling Wire, and Essence Lemon, Super For cash, cheap. Merchant, 60 Silchester Road, Nottin Hill, W.

3 dozen narrow-mouthed bottles, 30 ounces; 3 dozen wi mouthed do., 30 ounces; 1½ dozen narrow-mouthed bott 20 ounces; 1½ dozen wide-mouthed do., 20 ounces; 3 doz jars (all gold-labelled). E. G. Wales, Chesterton, Nor Staffordshire.

3 36-gallon cisterns with taps, 4 12-gallon cisterns with taps 3 4-gallon oil tins with taps; 90 gold labelled drawers good condition, part of them mahogany fronted, the mainder painted mahogany and glass knobs; upri mahogany counter case and 16 partitioned drawers counter. Frederick Gibson, 93 Gooch Street Birmingha

Turkey Toilet Sponge, clearing out, cheap, at 12*s.* 6*d.* by case. We offer it to the trade in 7-lb. bags at 6*s.* per Large quantity quart and pint circular Bunsen's Batter new, superior finish, 4*s.* and 5*s.* 6*d.* per cell. 3 dozen G man Seltzer, pints, 3*s.* 6*d.* dozen. Cash with orders. Hatch Isaac & Co., Clifton.

About 30 lbs. Dec. Sarzæ Co. Conc., 1 to 8, value 5*s.* lb., wh or part for 3*s.* 6*d.* lb. Sample, 6*d.* stamps. 2,000 gro vial corks (good) soiled through lying at docks. 100 gros and upwards, 5*d.* gross; less quantities, 6*d.* gross (h usual price). Samples, 2*d.* stamps. Merchant, 60 S chester Road, Notting Hill, W.

1 dozen each 4-oz. and 16-oz. Brown Jars, with japanned covers, quite equal to new. 5-grain Pill Machine, to 24. 1-6th doz. 1*s.* Hard's Food; 1-6th doz. 3*s.* 6*d.* O ridge's Balm Columbia; 1-6th doz. 2*s.* 9*d.* Dr. Bello Charcoal; 1-6th doz. Butler's Pomade Divine, 2*s.* 9*d.* A Gill Stove, 2 feet high by 10 inches long, 6 yards piping, with 2 elbows. W. H. Solomon, Chemist, Hanley.

26 ½-gallon upright Stone Bottles, gilt labels and covers; 4 Wedgwood Funnels; ½-gallon square Tr. Press; oils lavand, anise, santal, flav., rosmar, minth. pp, myrist., a others; a few tinctures; magnesia calc.; rad. rhei, rad jalap, cort. cinchonæ., pot. iod., saffron, chloroform, & Remains of recent stock. Offers wanted. C., 153 Liverpool Road, London, N.

9 Möller's Oil, at 1*s.* 3*d.*; 28 lbs. Pot Prussias, at 1*s.* 3*d.*; 1 Judson's 1*s.* 6*d.* Dyes, 9*s.*; 10 Corbyn Quarts, g labelled, 5*s.*; 6 × 13½*d.* Virginia Gum, 4*s.*; 6 × 7½*d.* ditto, 2*s.* 6*d.*; 3 × 5/6 Merrick's Husk Mixture, 9*s.*; lot Homœopathic Books, cheap, list 1*d.*; Petroleum Tester complet 7*s.* 6*d.*, cost 12*s.* 6*d.*; lot clean Tinnivelly Senna, 5*d.* lb. J. Floyd, Bury St. Edmunds.

18 Botts. Beaufoy's chloride lime, 27*s.*; coffee mill on oak block, 10*s.*; large hand truck, 20*s.*, or offers. Fown s "Chemistry," 10th edition, 7*s.* 6*d.*; Macadam's "Practical Chemistry," 2*s.*; Parkes' "Chemistry," 2*s.*; Cassell's "Latin Grammar," 2*s.* 6*d.*; "Celsi de Medicina," complete edition, 4*s.*; first book "Celsi," with translation, 2*s.*; Barff's "Chemistry," 2*s.* 6*d.*; "Introduction to Sciences," 1*s.*; Royle's "Materia Medica," 5th edition, 7*s.*; Leuchs. "Elements Pharmacy," 5*s.*; "Selecta e Prescriptis," 3*s.*; all nearly new. Thresh, Pharmaceutical Chemists Dukinfield.

nd bracket, outside, with ruby panes, words "Medical
ll" on front; cost 3*l.* 5*s.* 12 months ago; take 30*s.*
nut, Buckley, near Mold.

uperior Spanish Mahogany Chemist's Window enclosure,
front enclosure, about 250 drawers gold labelled, with
lving over and lockers under. Front side enclosure, 25
long, with four folding glazed doors, two single ditto,
er part with dwarf panelled and moulded doors and
isions to form cupboards, and about 150 feet shelving.
e whole removed from Bolton's, High Holborn.) Lloyd
ner, 309 New North Road, Islington.

of deal Drug Drawers, painted to imitate mahogany,
n gold labels and lockers all complete, 11½ feet long,
inches deep, solid back to carcase, 4*l.* 10*s.* Also 21 4-lb.
ite Jars, gold labelled, as Maw's Fig. 1, 1*l.* 15*s.* Also
pint wide-mouth Bottles, gold label, 1*l.* 9*s.* All the
ve were new under three years ago, and are in real
d condition. Apply G. Beall, Chemist, Holderness
ad, Hull.

"Receipts," 18*s.*; Quain's "Anatomical Plates," 4 parts,
lates, coloured, nerves, 7*s.* 6*d.*; Erichsen's "Surgery,"
2, 30*s.*; Muspratt's "Chemistry," 45*s.*; Fowne's
hemistry," 9th edition. 7*s.* 6*d.*; Fresenius' "Qualitative
Quantitative Analysis," 18*s.*; Laurence's "Lectures on
n," whole calf, 7*s.* 6*d.*: Dewhurst's "Human Muscles,"
ured plates (one missing and three inserted), 6*s.*;
pson's "Homœopathy," 2*s.* 6*d.* A. Davis, 161 Seven
ers' Road, London, N.

r immediate disposal the Stock, Fixtures, &c., of Drug-
s Business, comprising set mahogany-fronted drawers
mahogany painted ditto (81), mahogany desk and
case, counter glass case, upright ditto, 2 counters,
show carboys, 2 show jars, &c., &c., 11 blue syrup
es, 12 2-lb. blue ointment jars, 8 extract jars, 142
es various sizes labelled, 8 various mortars, tincture
, pill machine, scales, weights, &c., &c., and other
utensils, with about 40*l.* of drugs and sundries.
y R. N., Post Office, Boston.

oth Forceps, consisting of 12 pairs. Tomes' pattern,
finish, checquered handles, in case. New. Sent on
oval. Lowest price, 46*s.* Vulcanizers, 30*s.* A quan-
of Surgical Instruments, cheap. Smee's 6-cell Battery,
Halse's Battery, 70*s.* Gazogene, Breit's, 3 pints, new,
Twelve Boxes Fire Lighters, 20*s.* A quantity of Show
es, cheap. Large Coffee Mill, cheap. Cigar Case, 6
, 25*s.* Five Nests of Drawers. Eighteen Tea Canisters.
Grinding Mill, with 2-horse engine and boiler; cost
lowest price, 35*l.* Address, J. Garforth, 14 Nether-
e Street, Sheffield.

usand New and Second-hand gold-labelled Shop Bot-
Blue, syrup, acid, patent oil and æther with glass
Black and green glass upright stock bottles, gilt or
ned caps, all sizes. 150 dozen blue, white, green
enware shop jars, cold cream, pomade, infusion pots,
ll sizes. 30 show jars, with glass and japanned covers.
cle jars, 8 2-gallon carboys. 2 upright mahogany and
t glass show cases. Several flat ditto. 2 dispensing
s, with desks. Quantity shelving, drawers, counters,
cases with glass slides and divisions. Tablet, written
pensing Department," on gold ground; one ditto, "Mid-
y." Large bust, Hahnemann. Quantity homœopathic
cines. Gas reflector. 1 medico-galvanic battery. 6
brass forceps. 10 large brass caps for gas jars. 12
grating spoons. 11 brass caps with stufting box for
2 bells for electrical apparatus. 36 test tube and
stands. Jointed and universal clamps. Sliding
s. 1 small gas holder. 325 glass, Wedgewood, stone
ls, mortars and pestles. Marble and iron mortars. 1
ior 1-gallon tincture press. Superior lamp and
et. Leech and honey vases. 14 lbs. nitrate silver
odide potash. 56 lbs. calomel. 5 cwt. tartaric acid.
(Barbadoes, Cape, Socotrine). 30 dozen boxes of 3
s best transparent glycerine soap. 3 lbs. finest oil
geranium. All the leading patents at 9*s.* dozen.
an's, 7*s.* 3*d.* Large and various stock drugs, chemi-
Stamp for List. Lloyd Rayner, 309 New North
Islington, London.

Fowne's "Chemistry," 10th edition, 6*s.*; "Selecta é Prescriptis," 3*s.* 6*d.*; Bloxams "Laboratory Teaching," 3*s.*; Royle's "Materia Medica," 8*s.*; Galloway's "Chemistry," 4*s.*; Ferguson's "Electricity," 2*s.*; Frankland's "Lecture Notes I." 3*s.*; Day's "Physiological Chemistry," 4*s.* 6*d.*; Mac Adam's "Chemistry," 1*s.* 6*d.*; Newth's "Philosophy," 2*s.* 4*d.*; "Year-Book Pharmacy," 1870 (what offers?); Dowson's "Latin Grammar," (root system), 1*s.* 3*d.*; "Virgilii Opera," 1*s.* 6*d.*; Colenso's "Arithmetic," 2*s.* 6*d.*; 5*s.* Burchell's "Practical Geometry," 2*s.* 6*d.*; Hugh's "Physical Geography," 2*s.* 3*d.*; 3 Henry's "First Latin," 1*s.* 2*d.* each. All good as new. H. Woolnough, Maddermarket, Norwich.

WANTED.

London Parmacopœia, for preliminary, 32/230.

A 1-gallon Glass Percolator, graduated, quite perfect. Z. Z., Post-office, Brentwood.

Faraday's "Chemical Manipulation." W. W., Medical Hall, Gooch Street, Birmingham.

Southall's "Materia Medica Cabinet." Late edition. State price and condition. G. Burford, Cornhill, Ipswich.

3-gr. pill machine; 1 and 2 vols. "Pereira;" mill for grinding seeds. W. H. Solomon, chemist, Hanley.

A water-bed and pillow; state size, condition, maker, and price. R. Griffith, Slough.

To purchase, a marble mortar to hold about 10 gallons. Apply to Wyleys & Co., Coventry.

"Mamma" feeding bottles complete. State quantity and price. McIver, chemist, Dingwall.

Southall's "Materia Medica Chest." Good condition, cheap. Chas. Burrows, 23 Low Pavement, Chesterfield.

Barber's "Pocket Pharmacopœia," last edition. State price. J. Munday, chemist, Bridgnorth, Salop.

Complete Fittings for First-Class Chemist's Shop. X., Post Office, Bradford Street, Manchester.

A Glass Show Jar (labelled Rhubarb), 22½ inches high and 43½ inches in diameter. Must be cheap. W. Christopher, Crickhowell.

Watts' "Dictionary of Chemistry," with or without supplements. Dispensing scales as Maw, fig. 7. Heald, chemist, Sleaford.

About 1½ dozen Black Glass 3-quarts or 1-gallon store bottles State price, dimensions, and condition. R. W. Duck, Whitby.

Redwood's Edition of Gray's "Supplement to Pharmacopœia." Other medical books in exchange. T. A. S., Glen Villa, Edgerton, Huddersfield.

Illegible Autograph Prescriptions. The dried specimens of Southall's "Cabinet." Phillips' translation, P.L., 1851. 27/229.

A first-rate formula for making a good and cheap furniture composition or cream. For particulars address Y. O. S., Post Office, Huddersfield, Yorkshire.

"Beasley's Book of Prescriptions" in exchange for "Pharmaceutical Latin Grammar." E. Stevenson, corner of Neville Street, Southport.

Cylinder for ice cream soda apparatus: bent glass counter case, not less than 3 feet long. For sale, 50 ozs. ferri et quinæ cit. in 2-oz. bottles; offers for whole or part; sample, two stamps. Gason, Guildford.

TRADE REPORT.

THE most interesting commercial question of the moment refers to the probable destination of the bulky surplus which our late years' wonderful tide of commerce has washed into the national coffers. As usual there are plenty of claimants. A few days will probably decide whether the income tax is to be relieved or abolished, as it is stated that it will be legally necessary to reimpose the tax previous to its expiration on March 31, if its aid cannot be dispensed with. The general impression is that Sir Stafford Northcote, who is essentially a *safe* financier, will not abandon the tax, but will probably reduce it to 2*d*. If entirely removed it would undoubtedly be desirable to frame some scheme so that the middle classes should bear their fair weight of national taxation, but it is to be doubted whether the present Government will be disposed to regard the disbursements of the wealthy classes from the point of view of proportion rather than amount. Notwithstanding the gradual ameliorations which have been unquestionably accomplished during the past forty years, it is still the fact that taxation is heaviest where it should be lightest, and we trust that the present chancellor will not allow aristocratic and territorial influence to sway him in his disposition of benefits.

The present being the chief season for shipments, prices of chemicals are fairly maintained; but this is not so much a consequence of the demand as of the fact that quotations are but little above absolutely necessary remuneration in any case. Buyers for export are willing to accept parcels of almost anything at a reduction; but they are not particularly urgent for staples at makers' prices; weakness is undoubtedly the characteristic tone of the market. One of the generally most buoyant of the circulars, that of Messrs. Berger, Spence, & Co., remarks that the dullness which prevailed in the chemical market throughout February has been continued into March with even a more decided feeling; and now the opinion is becoming more general that we really may expect to experience a lengthened period of depressed business and reduced prices. It is very probable that a restriction of the production may exercise a salutary influence; but this course can only act in one way; although the supply may be reduced yet it cannot affect the demand, and now it will take a very considerable restriction indeed to mitigate the influence likely to be exercised by a further limitation in the requirements of consumers. The dullness is particularly in the home trade, the shipments abroad being still well up to the average, and it is to be expected that this month and the next will considerably add to their future dimensions. During the week caustic soda has declined another 5*s*. per ton, and is now 6*l*. per ton cheaper than it was this time last year, without a corresponding reduction having taken place in the cost of production. All the other alkali products are equally flat, but no change has taken place in quotations. Nitrate of soda has also declined about 5*s*. per ton. Muriate of potash has gone so low that it cannot well go lower, and yet the demand is most inactive. Sulphate of ammonia in fair request at a reduction of 10*s*. per ton. Sulphate of copper quiet at about 28*l*. 10*s*. per ton. Bleaching powder is quoted at 10*s*. 6*d*., but buyers will not give more than 10*s*. 3*d*. Another half-sovereign has been extracted from mercury, which is now quoted at 19*l*. 10*s*. per bottle. It is firm at this price. The news of the entrance of the British troops into Coomassie has directly affected the price of quinine, as the conclusion of the war will close one big outlet for the product. Manufacturers have reduced their quotations to 8*s*. 3*d*., at which both French and English preparations are now obtainable. Citric acid holds its position firmly, and considerable business has been done. Lemo juice is only to be bought in small quantities. Tartaric h been equally firm. Iodine and its preparations have be loosened a little, but are still firm. Cream of Tartar is stronger Camphor is plentiful, but is held with confidence.

The opium market continues remarkably depressed, but difference in quotation is to be recorded. For reasons we ha previously given, we cannot anticipate reduction, though lat we notice, the makers of morphia have quoted lower. T supplies of cinchona recently offered in the London mar have been of inferior quality. Good samples of calisaya ar eagerly competed for. The importation of foreign expre almond oil has caused home pressers to reduce their price 11*d*. They maintain, however, that the foreign article is very inferior quality.

The Adrianople rose crop for 1873 is reported to have on the whole a good one, and consequently the manufactur otto of roses, for which this district is so celebrated, has fairly remunerative. Distillation, however, owing to the ex cessive wet weather, being profuse, the produce was not of best quality. About 938,000 ozs. was the result, and as price, which of course varies with the quality, ranges f 13*s*. 1*d*. to 16*s*. 10*d*. per oz., the whole is valued at abo 70,000*l*. The German merchants are the principal custom for this article of luxury, and annually purchase over 60, ozs., the remainder generally going to the Eastern markets.

Speculators have laid their hands on the stock of oil peppermint of the H. G. Hotchkiss brand, and have started upwards. They will possibly get the control of what rema on hand. Oil of cloves is stiff, and there is no early prosp of amelioration.

Shellac has maintained the high price which it reached month, and has shown an intermittent tendency to still high figures.

At the first quarterly cinnamon sales of this year, held 2 ult., supplies were large, consisting chiefly of middling qualit with only a small proportion of fine and superior. There w a steady demand at 4*d*. to 8*d*. per lb. decline upon last Novem sales rates, and the greater part was disposed of, about same decline having been submitted to in the intermed sales. Of 2,833 bales offered 2,600 bales sold at prices var from 2*s*. to 3*s*. 10*d*.

Cloves are in no danger of falling much; but with little mand, and arrivals from the Continent, the market has dull during the past fortnight, although there are sellers at per lb. under last quotations. 485 packages offered at au last week were all withdrawn.

The expected loss of a heavy arrival of nutmegs has them firmer in the market.

The quarterly sales of West Indian indigo took place on t 2nd inst. and following days. The quality was extremely g and the demand was very active. In all, some 5,000 ser were placed at an average advance of 4*d*. to 1*s*. over the r of the last October sales. Intelligence was received during auctions of the wreck of the *Woosung*, with 1,600 chests E. I. indigo on board, which of course had the effect of st lating purchasers.

Olive oil has fallen slightly, in consequence of the absenc buyers, who hold off until after the March settlements. We h a report from Naples, dated February 28, which says that g rains have followed the dry and frosty weather of January that this weather is calculated to give strength and vigour the olive trees for the approaching flowering.

Other oils are dull and slow of sale. Sperm is not to be ha but would command 100*l*. per tun. Higher quotations spermaceti may be looked for. Turpentine has fallen consi ably, but still arrives freely.

The fall in petroleum, too, continues. The nominal pri 1*s*. 0¼*d*., but the last cargo of 3,700 barrels was sold for usual delivered terms.

Monthly Price Current.

ices quoted in the following list are those actually obtained in ing Lane for articles sold in bulk. Our Retail Subscribers must xpect to purchase at these market prices, but they may draw from useful conclusions respecting the prices at which articles are d by the Wholesale Firms.

ICALS.

	1874.					1873.				
s—	s.	d.		s.	d.	s.	d.		s.	d.
cetic ....per lb.	0	4	to	0	4½	0	4½	to	0	0
itric .... ,,	4	6	..	0	0	4	10½	..	4	11
ydrochlor......per cwt.	4	0	..	7	0	4	0	..	7	0
itric ....per lb.	0	5	..	0	5½	0	5	..	0	5½
xalic .... ,,	0	7¼	..	0	0	0	10	..	0	0
lphuric ...... ,,	0	0¾	..	0	1	0	0¾	..	0	1
rtaric crystal.. ,,	1	7	..	1	7½	1	7½	..	1	8
powdered ,,	1	7¼	..	1	7½	1	8	..	0	0
ONY ore ......per ton	200	0	..	240	0	320	0	..	560	0
crude .. per cwt.	0	0	..	0	0	0	0	..	0	0
regulus .. ,,	0	0	..	0	0	0	0	..	0	0
star...... ,,	51	0	..	53	0	61	0	..	64	0
IC, lump ...... ,,	20	6	..	0	0	18	6	..	19	0
powder.... ..	10	0	..	10	3	10	6	..	0	0
TONE, rough ...per ton	127	6	..	145	0	125	0	..	147	0
roll .. per cwt.	10	0	..	0	0	10	0	..	10	6
flour.... ,,	11	6	..	12	6	11	6	..	12	0
E. dry ....per oz.	1	0¼	..	0	0	1	0	..	0	0
BLACK, dry .. per cwt.	8	6	..	0	0	8	6	..	0	0
ESIA, calcined..per lb.	1	6	..	0	0	1	6	..	0	0
RY ....per bottle	390	0	..	0	0	270	0	..	0	0
M, red ...... per cwt.	25	0	..	25	3	21	3	..	21	6
orange .. ,,	37	0	..	0	0	32	6	..	0	0
PITATE, red . per lb.	6	1	..	0	0	4	5	..	0	0
white ,,	6	0	..	0	0	4	4	..	0	0
AN BLUE .. ,,	0	0	..	0	0	0	0	..	0	0
s—										
n .... per ton	170	0	..	180	0	170	0	..	180	0
powder...... ,,	190	0	..	0	0	190	0	..	0	0
nonia :										
rbonate...... per lb.	0	7	..	0	7¼	0	7½	..	0	7¾
drochlorate, crude,										
white .... per ton	650	0	..	0	0	640	0	..	0	0
British (*see* Sal Am.)										
phate........ per ton	340	0	..	360	0	390	0	..	395	0
l, Cape ......per cwt.	87	6	..	96	0	80	0	..	90	0
Red........ ,,	77	6	..	85	0	67	0	..	70	0
Oporto, red. ,,	30	0	..	32	6	32	0	..	33	0
Sicily ...... ,,	52	6	..	57	6	65	0	..	70	0
s (*see* Potash and Soda)										
hing powd...per cwt.	10	6	..	0	0	14	3	..	0	0
x, crude...... ,,	40	0	..	85	0	55	0	..	75	0
British refnd. ,,	75	0	..	0	0	105	0	..	0	0
el ....per lb.	5	8	..	0	0	3	10	..	0	0
er :										
phate ....per cwt.	29	0	..	29	6	31	0	..	31	6
ras, green..per ton	60	0	..	62	6	60	0	..	62	6
sive Sublimate p. lb.	4	11	..	0	0	3	4	..	0	0
rtar, French, p. cwt.	111	0	..	0	0	107	6	..	0	0
brown ,,	95	0	..	100	0	97	6	..	102	6
Salts ....per cwt.	5	9	..	6	3	5	9	..	6	3
er Salts .... ,,	4	6	..	5	6	7	6	..	0	0
:										
tate, white, per cwt.	14	6	..	21	0	14	0	..	22	6
esia : Carbonate ,,	42	6	..	45	0	42	6	..	45	0
h :										
hromate ....per lb.	0	8½	..	0	0	0	8½	..	0	0
bonate :										
otashes, Canada, 1st										
sort ......per cwt.	35	0	..	0	0	37	6	..	0	0
earlashes, Canada, 1st										
sort ......per cwt.	46	0	..	0	0	49	0	..	0	0
orate ......per lb.	1	1	..	0	0	1	8	..	1	9
ssiate .... ,,	1	2	..	0	0	1	5½	..	1	5¾
red.... ,,	2	10	..	2	11	3	1	..	0	0
trate (*see* Argol and Cream of Tartar)										
lum :										
oride......per cwt.	6	9	..	7	0	9	0	..	9	6
ide ....per lb.	16	0	..	16	6	16	0	..	0	0
ne :										
hate, British, in										
ottles ......per oz.	8	3	..	0	0	7	8	..	0	0
hate, French ,,	8	3	..	0	0	7	8	..	0	0
etos ......per lb.	0	10½	..	0	0	1	1½	..	0	0
nmoniac, Brit. cwt.	44	0	..	45	0	48	0	..	49	0
tre :										
gal, 6 per cent. or										
der ......per cwt.	22	6	..	23	6	29	3	..	30	0
gal, over 6 per cent.										
per cwt.	21	6	..	22	0	27	0	..	29	0
ish. refined ,,	27	3	..	28	0	32	6	..	33	0
Bicarbonate, p.cwt.	16	6	..	16	9	19	9	..	20	0
bonate :										
a Ash ..per deg.	0	2½	..	0	0	0	3¾	..	0	0
a Crystals per ton	110	0	..	0	0	146	0	..	150	0
sulphite, per cwt.	16	0	..	0	0	16	0	..	0	0
te ......per cwt.	11	6	..	12	6	16	3	..	16	6
LEAD, White cwt.	47	0	..	48	0	45	0	..	0	0
LEAD, Brown, cwt.	33	0	..	34	0	30	0	..	0	0
(*see* Brimstone)										

	1874.					1873.				
	s.	d.		s.	d.	s.	d.		s.	d.
VERDIGRIS .... per lb.	1	1½	to	1	6	1	1½	to	1	2
VERMILION, English ,,	5	2	..	0	0	4	1	..	4	2
China ,,	5	0	..	0	0	4	0	..	4	1

DRUGS.

	1874.					1873.				
	s.	d.		s.	d.	s.	d.		s.	d.
ALOES, Hepatic ....per cwt.	80	0	..	200	0	80	0	..	230	0
Socotrine .. ,,	110	0	..	240	0	160	0	..	320	0
Cape, good.. ,,	30	0	..	38	0	30	0	..	32	0
Inferior .... ,,	20	0	..	30	0	20	0	..	29	0
Barbadoes .. ,,	60	0	..	200	0	70	0	..	190	0
AMBERGRIS, grey........oz.	24	0	..	46	0	26	0	..	30	0
BALSAM—										
Canada...........per lb.	2	8	..	2	10	1	0	..	1	10
Capivi .... ,,	2	8	..	2	9	2	6	..	2	10
Peru .... ,,	8	0	..	8	1	9	2	..	0	0
Tolu.............. ,,	2	4	..	2	6	1	11	..	2	0
BARKS—										
Canella alba......per cwt.	15	0	..	28	0	15	0	..	25	0
Cascarilla .... ,,	25	0	..	30	0	23	0	..	37	0
Peru, crown & grey per lb.	0	9	..	2	4	1	0	..	2	8
Calisaya, flat ,,	2	11	..	4	6	2	10	..	4	3
,, quill ,,	3	0	..	4	6	2	10	..	4	10
Carthagena ,,	0	9	..	2	0	0	10	..	1	9
E. I. .... ,,	1	0	..	5	0	0	0	..	0	0
Pitayo ...... ,,	0	6	..	2	2	0	4	..	1	9
Red .... ,,	1	7	..	5	0	1	10	..	6	0
Buchu Leaves........ ,,	0	1	..	1	0	0	2	..	1	0
CAMPHOR, China ..per cwt.	87	6	..	0	0	85	0	..	0	0
Japan .. ,,	0	0	..	0	0	85	0	..	0	0
Refin. Eng. per lb.	1	3	..	0	0	1	2	..	0	0
CANTHARIDES........ ,,	5	9	..	6	0	5	9	..	6	6
CHAMOMILE FLOWERS p. cwt.	20	0	..	66	0	40	0	..	80	0
CASTOREUM ....per lb.	4	0	..	20	0	6	0	..	20	0
DRAGON'S BLOOD, lp. p. cwt.	100	0	..	300	0	100	0	..	240	0
FRUITS AND SEEDS (*see also* Seeds *and* Spices).										
Anise, China Star per cwt.	120	0	..	0	0	117	6	..	125	0
Spanish, &c. ,,	21	0	..	30	0	17	0	..	36	0
Beans, Tonquin....per lb.	1	5	..	2	0	2	0	..	3	0
Cardamoms, Malabar										
good .... ,,	4	11	..	5	7	4	2	..	6	0
inferior.... ,,	3	6	..	4	10	2	7	..	3	9
Madras.... ,,	2	6	..	4	6	2	0	..	4	6
Ceylon .... ,,	4	6	..	5	3	4	9	..	5	0
Cassia Fistula....per cwt.	10	0	..	20	0	12	0	..	22	0
Castor Seeds .... ,,	5	0	..	10	0	5	0	..	10	0
Cocculus Indicus ,,	14	0	..	15	0	12	0	..	14	0
Colocynth, apple ..per lb.	0	4	..	0	10	0	3	..	0	6
Croton Seeds ....per cwt.	52	0	..	53	0	55	0	..	0	0
Cubebs.......... ,,	23	6	..	25	0	23	0	..	0	0
Cummin .... ,,	16	0	..	24	0	20	0	..	26	0
Dividivi .... ,,	11	0	..	15	0	11	0	..	16	0
Fenugreek ...... ,,	8	0	..	18	0	9	0	..	10	0
Guinea Grains .. ,,	26	0	..	30	0	24	0	..	25	0
Juniper Berries ,,	9	0	..	10	6	10	0	..	10	6
Nux Vomica.. .. ,,	7	6	..	12	0	10	0	..	15	0
Tamarinds, East India,,	10	0	..	18	0	5	0	..	20	0
West India, new ,,	14	0	..	22	0	20	0	..	31	0
Vanilla, large .... per lb.	65	0	..	74	0	60	0	..	71	0
inferior ,,	40	0	..	63	0	30	0	..	58	0
Wormseed per cwt.	0	0	..	0	0	0	0	..	0	0
GINGER, Preserved, in bond										
(duty ¼*d*. per lb.) per lb.	0	7	..	0	10	0	6	..	0	9
GUMS (*see separate list*)										
HONEY Chili .... per cwt.	40	0	..	57	0	30	0	..	40	0
Jamaica ,,	40	0	..	53	0	30	0	..	45	0
Australian ,,	35	0	..	45	0	20	0	..	40	6
IPECACUANHA .... per lb.	3	0	..	3	4	3	4	..	3	7
ISINGLASS, Brazil.. ,,	3	2	..	4	9	2	6	..	4	6
Tongue sort ,,	3	3	..	5	1	3	4	..	5	2
East India ,,	2	1	..	4	9	1	0	..	4	5
West India ,,	4	0	..	4	7	4	0	..	4	5
Russ. long staple	8	6	..	12	6	8	0	..	12	6
,, inferior	4	0	..	8	0	3	6	..	7	6
,, Simovia	3	6	..	5	0	2	6	..	4	6
JALAP, good...... ,,	1	2	..	1	6	1	4	..	2	0
infer. & stems ,,	0	10	..	1	1	0	10	..	1	3
LEMON JUICE .... per degree	0	2¾	..	0	0	0	2¾	..	0	0
LIME JUICE........per gall.	2	5	..	3	3	0	0	..	0	0
LIQUORICE, Spanish per cwt.	40	0	..	70	0	0	0	..	0	0
Liquorice Root ,,	11	0	..	16	0	19	0	..	20	0
MANNA, flaky ......per lb.	2	6	..	3	0	3	0	..	3	3
small ...... ,,	1	2	..	1	5	1	2	..	1	8
MUSK, Pod..........per oz.	21	0	..	42	6	19	0	..	47	0
Grain........ ,,	50	0	..	55	0	50	0	..	62	0
OILS (*see also separatel ist*)										
Almond, expressed per lb.	0	11	..	0	0	1	0	..	0	0
Castor, 1st pale.... ,,	0	5½	..	0	0	0	5½	..	0	0
second .... ,,	0	5	..	0	5¼	0	5¼	..	0	0
infer. & dark ,,	0	4⅞	..	0	5	0	4½	..	0	4⅝
Bombay (in casks)	0	4¾	..	0	0	0	4¾	..	0	0
Cod Liver ...... per gall.	4	0	..	5	6	3	6	..	5	9
Croton .... per oz.	0	3	..	0	4	0	3	..	0	4
Essential Oils :										
Almond ....per lb.	25	0	..	0	0	30	0	..	0	0
Anise-seed ...... ,,	9	3	..	0	0	9	0	..	0	0
Bay ....per cwt.	0	0	..	0	0	65	0	..	70	0
Bergamot ...... per lb.	7	6	..	18	0	9	6	..	16	0
Cajeput, (in bond) per oz.	2	3	..	2	5	0	0	..	0	0
Caraway........per lb.	5	3	..	6	0	5	6	..	6	3
Cassia .... ,,	4	9	..	0	0	6	10	..	0	0
Cinnamon ......per oz.	1	0	..	8	0	1	0	..	2	0
Cinnamon-leaf .. ,,	0	3	..	0	0	0	3½	..	0	3⅝
Citronelle ...... ,,	0	1⅞	..	0	0	0	2	..	0	2¼
Clove ....per lb.	10	6	..	0	0	4	6	..	0	0
Juniper .... ,,	1	10	..	2	0	1	3	..	2	4

	1874. s. d.	s. d.	1873. s. d.	s. d.
Essential Oils, *continued*:—				
Lavender ......per lb.	1 10 ..	5 6	2 6 ..	5 6
Lemon .... ,,	10 0 ..	12 0	12 0 ..	15 0
Lemongrass ....per oz.	0 3 ..	0 0	0 3¼ ..	0 0
Neroli .... ,,	0 4 ..	0 6	0 5 ..	0 0
Nutmeg .... ,,	0 6½ ..	0 8	0 7½ ..	0 9
Orange..........per lb.	8 0 ..	12 0	7 0 ..	8 0
Otto of Roses....per oz.	13 0 ..	22 0	15 0 ..	28 0
Patchouli ...... ,,	3 6 ..	4 0	4 0 ..	0 0
Peppermint:				
American ....per lb.	20 0 ..	21 0	12 0 ..	14 6
English ...... ,,	30 0 ..	34 0	26 0 ..	28 0
Rosemary ...... ,,	1 4 ..	1 10	1 11 ..	0 0
Sassafras ...... ,,	2 4 ..	3 6	3 2 ..	3 3
Spearmint ...... ,,	6 0 ..	19 0	6 0 ..	20 0
Thyme.......... ,,	2 0 ..	2 2	1 10 ..	1 11
Mace, expressed ..per oz.	0 3 ..	0 3½	0 1½ ..	0 4
OPIUM, Turkey ......per lb.	26 0 ..	28 0	24 0 ..	27 0
inferior ...... ,,	11 0 ..	24 0	12 0 ..	20 0
QUASSIA (bitter wood) per ton	70 0 ..	100 0	85 0 ..	90 0
RHUBARB, China, good and fine ....per lb.	3 0 ..	4 6	2 9 ..	6 0
Good, mid. to ord. ,,	0 6 ..	2 6	0 8 ..	2 6
Dutch trimmed ,,	0 0 ..	0 0	9 0 ..	10 0
Russian .... ,,	0 0 ..	0 0	0 0 ..	0 0
ROOTS—Calumba..per cwt.	9 0 ..	18 0	18 0 ..	30 0
China .... ,,	18 0 ..	24 0	20 0 ..	27 0
Galangal.......... ,,	25 0 ..	26 0	18 0 ..	22 0
Gentian .... ,,	17 0 ..	19 0	18 0 ..	19 0
Hellebore .... ,,	30 0 ..	33 0	30 0 ..	32 0
Orris .... ,,	36 0 ..	80 0	29 0 ..	36 0
Pellitory .... ,,	38 0 ..	39 0	38 0 ..	39 0
Pink ....per lb.	1 0 ..	1 3	0 10 ..	1 0
Rhatany .... ,,	0 5 ..	0 11	0 5 ..	0 11
Seneka............ ,,	4 0 ..	5 0	4 3 ..	5 0
Snake .... ,,	1 8 ..	1 9	1 1 ..	1 2
SAFFRON, Spanish .. ,,	24 0 ..	28 0	24 0 ..	32 0
SALEP ....per cwt.	170 0 ..	200 0	170 0 ..	180 0
SARSAPARILLA, Lima per lb.	0 6 ..	0 9	0 5¾ ..	0 7
Para.............. ,,	1 0 ..	1 3	1 3 ..	0 0
Honduras .... ,,	1 0 ..	1 8	1 1 ..	1 8
Jamaica .... ,,	1 8 ..	2 6	2 0 ..	2 7
SASSAFRAS ....per cwt.	13 0 ..	16 0	0 0 ..	0 0
SCAMMONY, Virgin ..per lb.	25 0 ..	30 0	26 0 ..	31 0
second & ordinary ,,	8 0 ..	24 0	14 0 ..	25 0
SENNA, Bombay .... ,,	0 1 ..	0 5	0 2 ..	0 5
Tinnivelly .... ,,	0 1 ..	0 10	0 2 ..	0 10
Alexandria .... ,,	0 3¼ ..	1 10	0 2½ ..	1 0
SPERMACETI, refined ,,	1 4 ..	0 0	1 6 ..	0 0
American .... ,,	1 0 ..	0 0	1 2 ..	1 3
SQUILLS .... ,,	0 1½ ..	0 2	0 1¼ ..	0 2

GUMS.

	1874. s. d.	s. d.	1873. s. d.	s. d.
AMMONIACI drop .. per cwt.	60 0 ..	70 0	100 0 ..	160 0
lump.. ,,	50 0 ..	60 0	80 0 ..	130 0
ANIMI, fine washed ,,	245 0 ..	270 0	280 0 ..	330 0
bold scraped ,,	220 0 ..	240 0	220 0 ..	280 0
sorts ...... ,,	120 0 ..	210 0	140 0 ..	230 0
dark ...... ,,	70 0 ..	110 0	90 0 ..	130 0
ARABIC, E.I., fine ,,	60 0 ..	77 0	65 0 ..	77 6
pale picked .. ,,	70 0 ..	78 0	75 0 ..	84 0
srts., gd. to fin. ,,	40 0 ..	58 0	60 0 ..	69 0
garblings .. ,,	20 0 ..	46 0	23 0 ..	50 0
TURKEY, pick. gd. to fin. ,,	150 0 ..	220 0	160 0 ..	230 0
second & inf. ,,	80 0 ..	140 0	85 0 ..	150 0
in sorts .. ,,	50 0 ..	75 0	0 0 ..	0 0
Gedda .... ,,	21 0 ..	35 0	25 0 ..	42 0
BARBARY, white .. ,,	26 0 ..	43 0	50 0 ..	57 0
brown .. ,,	27 6 ..	36 0	34 0 ..	40 0
AUSTRALIAN...... ,,	28 0 ..	48 0	23 0 ..	45 0
ASSAFŒTIDA, cm. to gd. ,,	41 0 ..	65 0	45 0 ..	110 0
BENJAMIN, 1st qual. ,,	240 0 ..	520 0	160 0 ..	400 0
2nd ,, ,,	140 0 ..	240 0	135 0 ..	210 0
3rd ,, ,,	70 0 ..	85 0	60 0 ..	80 0
COPAL, Angola red ,,	115 0 ..	125 0	130 0 ..	140 0
Benguela ,,	110 0 ..	115 0	110 0 ..	112 6
Sierra Leone, per lb.	0 4½ ..	0 10½	0 3½ ..	0 10
Manilla....per cwt.	15 0 ..	23 0	14 0 ..	30 0
DAMMAR, pale .... ,,	43 0 ..	49 0	50 0 ..	55 0
EUPHORBIUM .... ,,	11 0 ..	15 0	12 0 ..	15 0
GALBANUM .... per lb.	1 6 ..	2 0	0 0 ..	0 0
GAMBOGE, pckd. pipe per cwt.	220 0 ..	300 0	280 0 ..	292 6
GUAIACUM ....per lb.	0 10 ..	2 10	0 8 ..	2 6
KINO..............per cwt.	60 0 ..	90 0	50 0 .	85 0
KOWRIE, rough .. ,,	20 0 ..	32 0	18 0 ..	28 0
scraped sorts ,,	33 0 ..	52 6	25 0 ..	35 0
MASTIC, picked ....per lb.	5 0 ..	6 6	6 0 ..	7 0
MYRRH, gd. & fine per cwt.	120 0 ..	260 0	120 0 ..	200 0
sorts .... ,,	80 0 ..	110 0	78 0 ..	115 0
OLIBANUM, p. sorts ,,	69 0 ..	74 0	66 0 ..	72 0
amber & ylw. ,,	64 0 ..	68 0	60 0 ..	63 0
garblings.... ,,	22 0 ..	38 0	20 0 ..	36 0
SENEGAL .... ,,	60 0 ..	65 0	60 0 ..	80 0
SANDARAC........ ,,	70 0 ..	105 0	50 0 ..	100 0
SHELLAC, Orange.. ,,	240 0 ..	262 6	182 6 ..	195 0
Liver .. ,,	220 0 ..	237 6	175 0 ..	190 0
THUS .... ,,	20 0 ..	26 0	24 0 ..	26 0
TRAGACANTH, leaf ,,	200 0 ..	400 0	270 0 ..	410 0
in sorts ,,	30 0 ..	150 0	70 0 ..	180 0

OILS.

	1874. £ s.	£ s.	1873. £ s.	£ s.
SEAL, pale ....per tun	36 10 ..	37 0	42 0 ..	0 0
yellow to tinged ,,	32 0 ..	36 0	37 0 ..	40 0
brown ...... ,,	30 0 ..	32 0	33 0 ..	0 0
SPERM............ ,,	0 0 ..	100 0	0 0 ..	0 0
COD .... ,,	36 0 ..	0 0	38 10 ..	0 0
Oils, *continued*:—				
WHALE, South Sea, pale, per tun	23 0 to	33 10	39 0 to	40 0
yellow ,,	32 10 ..	33 0	37 0 ..	35 0
brown ,,	30 0 ..	31 0	31 0 ..	35 0
East India, Fish ,,	26 0 ..	26 10	28 0 ..	0 0
OLIVE, Galipoli ...per ton	47 0 ..	0 0	44 0 ..	0 0
Trieste...... ,,	45 0 ..	0 0	43 0 ..	0
Levant .... ,,	41 0 ..	0 0	41 0 ..	0 0
Mogador .... ,,	40 0 ..	40 10	41 0 ..	0 0
Spanish .... ,,	42 0 ..	43 0	41 0 ..	41
Sicily ...... ,,	42 0 ..	0 0	31 0 ..	0
COCOANUT, Cochin.. ,,	39 10 ..	40 0	39 0 ..	40
Ceylon ,,	35 10 ..	35 15	35 0 ..	35
Sydney ,,	31 0 ..	35 0	29 0 ..	35
GROUND NUT AND GINGELLY:				
Bombay	0 0 ..	0 0	0 0 ..	0
Madras	36 0 ..	0 0	35 10 ..	0
PALM, fine..............	35 0 ..	35 10	38 10 ..	39
LINSEED..............	29 10 ..	0 0	33 0 ..	0
RAPESEED, English, pale ..	34 0 ..	34 5	37 0 ..	0
brown	32 5 ..	0 0	34 10 ..	35
Foreign, pale ..	34 0 ..	35 10	0 0 ..	0
brown	0 0 ..	0 0	39 0 ..	0
COTTONSEED	26 5 ..	26 10	30 0 ..	0
LARD	48 0 ..	49 0	44 10 ..	45
TALLOW	27 0 ..	34 0	32 0 ..	0
TURPENTINE, American, cks.	33 6 ..	0 0	46 6 ..	47
French ,,	32 9 ..	33 0	45 6 ..	46
PETROLEUM, Crude	0 0 ..	0 0	0 0 ..	46
	s. d.	s. d.	s. d.	s.
refined, per gall.	1 0 ..	1 0¼	1 5 ..	0
Spirit ,,	0 9 ..	0 9½	1 6 ..	0

SEEDS.

	1874.		1873.	
CANARY............per qr.	60 0 ..	68 0	46 0 ..	50
CARAWAY, English per cwt.	39 0 ..	44 0	40 0 ..	44
German, &c....	26 0 ..	36 0	30 0 ..	36
CORIANDER	8 0 ..	16 0	16 0 ..	18
HEMP..............per qr.	40 0 ..	44 0	40 0 ..	44
LINSEED, English per qr. ..	66 0 ..	70 0	0 0 ..	0
Black Sea & Azof	59 0 ..	62 0	61 6 ..	62
Calcutta ,,	61 0 ..	63 0	66 0 ..	0
Bombay ,,	63 6 ..	65 0	64 6 ..	0
St. Petrsbrg. ..	56 0 ..	58 0	60 0 ..	60
Mustard, brown..per bshl.	10 6 ..	15 6	13 0 ..	16
white.. ,,	8 6 ..	11 0	8 0 ..	9
POPPY, East India, per qr.	64 0 ..	0 0	71 0 ..	71

SPICES.

	1874.		1873.	
CASSIA LIGNEA ..per cwt.	70 0 ..	80 0	81 0 ..	90
Vera .... ,,	30 0 ..	61 0	25 0 ..	60
Buds .... ,,	115 0 ..	117 6	117 6 ..	12
CINNAMON, Ceylon:				
1st quality ......per lb.	2 4 ..	3 10	2 3 ..	3
2nd do. .... ,,	2 0 ..	3 3	1 9 ..	3
3rd do. .... ,,	1 6 ..	2 10	1 5 ..	3
Tellicherry ...... ,,	0 0 ..	0 0	2 8 ..	3
CLOVES, Penang .... ,,	2 1 ..	2 2	1 4 ..	1
Amboyna .... ,,	1 4 ..	1 4½	0 6½ ..	
Zanzibar.......... ,,	1 4¾ ..	1 6	0 8 ..	
GINGER, Jam., fine per cwt.	110 0 ..	252 0	100 0 ..	200
Ord. to good .... ,,	66 0 ..	105 0	52 0 ..	90
African	60 0 ..	0 0	45 0 ..	46
Bengal............ ,,	51 0 ..	60 0	44 0 ..	
Malabar .... ,,	50 0 ..	0 0	43 0 ..	44
Cochin .... ,,	73 0 ..	120 0	52 0 ..	
PEPPER, Blk, Malabar, per lb.	0 7⅛ ..	0 7⅝	0 7½ ..	
Singapore .... ,,	0 6½ ..	0 6⅝	0 4 ..	
White Tellicherry ,,	2 0 ..	0 0	0 0 ..	
Cayenne .... ,,	1 4 ..	1 10	1 0 ..	
MACE, 1st quality .. ,,	3 3 ..	3 10	3 6 ..	
2nd and inferior .. ,,	2 4 ..	3 2	3 0 ..	
NUTMEGS, 78 to 60 to lb.	3 7 ..	4 7	3 3 ..	
90 to 80 ,,	2 5 ..	3 6	2 11 ..	
132 to 95 ,,	2 11 ..	3 4	2 4 ..	
PIMENTA	0 3¼ ..	0 3½	0 3 ..	

VARIOUS PRODUCTS.

	1874.		1873.	
COCHINEAL—				
Honduras, black ..per lb.	2 1 ..	3 0	2 4 ..	
,, silver .. ,,	2 0 ..	2 4	2 4 ..	
,, pasty .. ,,	1 9 ..	1 11	2 1 ..	
Mexican, black .... ,,	2 2 ..	2 5	2 4 ..	
,, silver.... ,,	1 11 ..	2 0	2 3 ..	
Teneriffe, black .. ,,	2 2 ..	3 10	2 5 ..	
,, silver .. ,,	2 1 ..	2 3	2 4 ..	
PUMICE STONE ..per ton	120 0 ..	150 0	120 0 ..	
SOAP, Castile......per cwt.	33 0 ..	34 0	33 0 ..	
SPONGE, Turk. fin. pkd pr lb.	12 0 ..	16 0	12 0 ..	
Fair to good ..	4 0 ..	11 0	4 0 ..	
Ordinary .. ,,	1 0 ..	3 6	1 0 ..	
Bahama .... ,,	0 6 ..	3 6	0 6 ..	
TERRA JAPONICA—				
Gambier ......per cwt.	25 0 ..	0 0	23 0 ..	
Free cubes .... ,,	33 0 ..	37 0	27 6 ..	
Cutch .... ,,	21 0 ..	21 9	23 0 ..	
WOOD, DYE, Bar ..per ton	£3 15 ..	£4 0	£4 5 ..	
Brazil, Branch .... ,,	20 0 ..	26 0	25 0 ..	
,, Logs ...... ,,	9 0 ..	18 0	9 0 ..	
Cam.............. ,,	21 0 ..	30 0	15 0 ..	
Fustic, Cuba ...... ,,	9 0 ..	9 5	8 5 ..	
Jamaica .... ,,	6 5 ..	7 5	6 0 ..	
LOGWOOD, Campeachy..	8 10 ..	9 10	2 6 ..	
Honduras ..... ,,	6 10 ..	6 15	6 5 ..	
St. Domingo .... ,,	5 15 ..	6 0	5 0 ..	
Jamaica .... ,,	5 2 6 ..	5 10	5 2 6 ..	
LIMA, first pile .... ,,	13 10 ..	14 0	9 0 ..	
RED SANDERS .... ,,	7 0 ..	7 2,6	6 0 ..	

Trade Memoranda.

T. Davison, for eight years manager of one of the shments of the Glasgow Apothecaries' Company, has nced business at 126 Buchanan Street, Glasgow.

Page, chemist, who for many years managed the business ts & Co., druggists, Bath, has taken the old-established ss of Nosworthy & Co., Barnstaple.

Walton, who succeeded the late Mr. Tanner, chemist, has made another move; this time he goes to Maiden- Berks.

Hare, chemist, Paris Street, Exeter, has retired from the ind has adopted the profession of a printer; he is suc- by Mr. Mills.

anch of the Civil Service Co-operative Society has been in Exeter, under the title of the Devon Civil Service rative Society (Limited); they intend to deal in medicines igs.

Passmore, dentist, son of Mr. Passmore, chemist, of has purchased the practice of Mr. Acland, dentist, Mr. Acland was formerly in business as a chemist in Street, Exeter.

Yates, chemist, formerly of Torre, Torquay, has opened ess in the little town of Brent, South Devon, having l of his Torquay business to Mr. Taylor, late assistant rs. Badham & Sloman, Torquay.

Dampney, chemist, of Milbay, Plymouth, has retired from il trade, having disposed of his business to Mr. A. G. Mr. Dampney has gone into the wholesale oil and rade.

. Eaton, who has been assistant to Mrs. Pipe, chemist, , since the death of her husband about four years ago, e arrangements for taking the business and carrying it lf.

Villiamson, late assistant to Mrs. Davis, chemist, War- reet, Leamington, has opened a very handsome shop in Well, Coventry.

ooth, chemist, has opened a business in Market Street,

rose, chemist, Taunton, has disposed of his business d taken another in Swansea. He will be succeeded by , who was formerly assistant to Mr. Hambly in the p.

ve been shown some very excellent balances manufac- Messrs. Becker & Son, of New York, and supplied in by Mr. Gillman, 57 Ludgate Hill, London. Besides nsive ones necessary for scientific purposes, Messrs. anufacture cheaper ones for pharmaceutists, which are, remarkably sensitive, and at the same time seem to ly made.

B. Sellors has purchased the old-established business ilkes, of Tewkesbury.

radbury, Chemist, &c., of Woore Market, Drayton, s removed to Thavington, Crewe, Cheshire.

ersation Lozenges" have fallen under the scrutiny of Mackay, a sanitary inspector for Southwark. Mr. Duffy, a confectioner, of 697 Old Kent Road, was d before Mr. Benson on Thursday last by this keen Dr. Bernays gave evidence that these conversation were manufactured of good sugar, but contained a ntity of starch and some other ingredients. On using scope he discovered blue starch and a small quantity red glass—a ten-thousandth part of the latter and a tarch. Mr. Benson asked if it were injurious to health. ys replied that it was not unless taken to a great Children might suffer from over-eating them. He he blue starch was used with the sugar to improve rance of the lozenges. In cross-examination witness farina or some such substance was used in the manu- lozenges, and powdered starch would be useful in em out. Mr. Ody, on the part of the defendant, con- at there was nothing deleterious or injurious to health position of the lozenges, and he thought it was paltry rt of the vestry in taking these proceedings. The vestry l any share in this prosecution which had been instigated the inspector who had such power. The magistrate said tor had acted quite properly, though he thought this case ne within the Act. The summons was therefore dismissed.

NOTES AND QUERIES

Magnesia.—Yes; a neutral citrate might obviously be prepared by saturating a solution of citric acid with the carbonate; but experience has shown that when so prepared the salt quickly loses its solubility. The following method is recommended in *L'Aide Mémoire de Pharmacie*:—

℞ Acid Citric, grs. 200
Magnesiæ Levis, grs. 29.

Fuse the acid in its water of crystallisation by means of a water bath, and incorporate the magnesia carefully. The mixture, which is at first pasty, solidifies, and is then pulverised. This citrate is perfectly soluble in eight or ten times its weight of water, and is destitute of any disagreeable taste.

Alpha.—Palm oil is obtained from the fruit of the *Elais guineensis* and *E. melanococca*. It is used by the natives in Africa as a regular article of food, and sometimes, we are afraid, unwittingly by the natives of this country, under the form of fresh butter. The quantity imported in the year 1868 represented a money value of nearly two millions sterling.

Condiment.—All the advertised farinaceous foods and cattle spices are (as the old lady said) "much of a muchness." Some people try to delude themselves, or rather their animals, into the idea that a penny packet o 'condiment" renders the old-fashioned ration of oats, or dish of barley-meal, quite unnecessary adjuncts. One might as reasonably endeavour o dine off the mustard pot. We can recommend you the following as both "nutritious and appetising":—

Take of

Barley Meal	2 lbs.
Ground Rice	1 lb.
Pea Meal	1 lb.
Linseed Meal	1 lb.
Powdered Gentian	¼ lb.
,, Fennel Fruit ..	¼ lb.
,, Fænugreek ..	¼ lb.

Mix.

F. B.—The following is prescribed by a well-known physician as a remedy for asthma—

℞ Potassii Iodidi, ʒij.
Tinct. Lobeliæ, ʒi.
Aquæ Destill., ℥xv.

Ut fiat mist. Capiat cochleare magnum ter in die.

Ignoramus.—The name "arrowroot" originated from the fact that the bruised rhizomes, which furnish the starch, were employed by the native Indians as an application to the poisoned wounds inflicted by their arrows. *Tous les mois* is obtained from one or more species of Canna. Both belong to the order *Marantaceæ*.

W. M.—"Limes and Glycerine":—

℞ Ol. Amygd. Pallid. ℥ij.
Aquæ calcis ℥iv.
Glycerin ʒi.
Ol. Limonis ʒss.

Put the oil of almonds into the bottle, then add the lime water gradually, shaking after each addition, and lastly the glycerine and essence of lemon.

J. S.—We gave a process for bleaching tallow in our "Notes and Queries' for December last.

O. S.—32 pounds of sulphur ($S=32$) would produce on complete combustion 64 pounds of sulphur dioxide ($SO_2=64$), one pound of sulphur would therefore produce $\left(\frac{64}{32}=\right)$ 2 pounds of the gas. Since 64 grains would occupy 22·4 litres, 2 pounds or 907·2 grains would occupy $\left(\frac{22\cdot4\times907\cdot2}{64}=\right)$ 317·52 litres, measured at the standard temperature and pressure, or very nearly 70 gallons.

J. F. R.—We do not think there is any work published on "Disinfectants." You would find articles on the subject in the scientific journals, which would, no doubt, supply you with the information you require.

Solder.—Jeweller's solder is prepared as follows:—

Take of	Gold,	3	parts.
	Silver	2	,,
	Copper	1½	,,
Fuse together, and then add	Zinc	½	,,

Balsam.—Hager has recently published the following method for the detection of adulteration in Balsam of Peru. From two to three c. c. of the sample should be shaken with six or eight c. c. of petroleum ether. On being allowed to stand, the mixture separates into two strata, the lower, if the balsam be pure, consisting of a dark brown mass, and the upper of a colourless liquid, which can be decanted. When adulteration is present, the supernatant liquid has a decided yellow or brownish colour, or is opaque, or the dark residue is mobile and passes over with the clear liquid, instead of adhering to the sides of the tube.

Lucifer.—The quantity of phosphorus in matches varies considerably, ranging from 4 or 5 to 30 or 40 per cent. Various methods have been proposed with a view to reducing these excessive amounts. By dissolving it in carbon bisulphide, for instance, previous to mixing it with the rest of the composition, it is found that even $\frac{1}{300}$ of the quantity now used is sufficient. Thanks to Messrs. Bryant & May, the frightful effects of the phosphorus fumes upon the workmen are entirely absent from the manufacture of "Safety Matches." The paste applied to the match head, which has been dipped in the usual mixture of paraffin, &c., is prepared as follows :—

℞ Potass. Chlor. .. .. 6 parts.
Antim. Sulphid. .. .. 3 ,,
Glue .. .. 1 ,,

The composition on the box is made up of :—

Amorphous Phosphorus .. 10 parts.
Oxide of Manganese .. .. 8 ,,
Glue .. .. .. 3 to 6 ,,

P. R.—"Ginseng" is the root of the *Panax Ginseng*, a plant belonging to the *Arabaceæ*, or Ivy order. It is wonderfully prized by the Chinese as a stimulant, and they will gladly give its weight in gold to obtain it. Its name signifies "Wonder of the World."

F. W. is kind enough to send us a description of another triumph of Yankee genius in the shape of a "Patent Cat Exterminator." It is described as a "large sheet-iron cat, with cylindrical attachment and steel claws and teeth. It goes by clockwork; and a small bellows inside causes the tail to swell, and also, by a tremolo attachment, causes the patent cat to utter those wild cries so familiar to the sleepless. Being duly wound up, the machine is placed on the roof of the house. Its diabolical yells attract every cat within half a mile; then the iron teeth and claws go to work, and with lightning rapidity all the assailants are torn to shreds." Any of our readers on the look out for a striking advertisement might employ this pleasant little contrivance—a profitable investment. We think we can guarantee notoriety to the establishment adopting our suggestion.

Vinum.—In genuine grape wine the phosphoric acid present is combined with magnesium; but in other fruit wines it exists in combination with calcium. The addition of ammonia to the former will therefore give, on standing, a precipitate of the ammonia-magnesian phosphate.

Analyst.—Dr. Mohr has recently called attention to the fact that Swedish filter paper, as now sold, always contain some soluble alumina, and is therefore unworthy of its traditional reputation.

D. O. T. (1).—Syrup of capillaire is properly prepared from an infusion of the fronds or rhizomes of the maiden-hair fern. Its properties then would be mildly astringent and aromatic. Generally, however, it is simply a mixture of sugar and orange flower water.

(2). "Pink saucers" are coloured with a dye obtained from the florets of *Carthamus tinctorius*, or bastard saffron. The magnificent aniline dyes of Messrs. Judson have quite superseded preparations of this kind.

J. R. T.—Vulcanised indiarubber is made by gently heating caoutchouc with two or three per cent. of sulphur. By increasing the temperature, ebonite or vulcanite is formed. *Gutta percha* is quite distinct from caoutchouc, it being the concrete juice of plants belonging to the order *Sapotaceæ*.

A Tyro.—The best method of ascertaining whether all atmospheric air has been expelled from the hydrogen apparatus is to invert a test tube over the nozzle. Let it remain a few seconds, then quickly remove it and apply a light to the inverted mouth. If the gas lights quietly, there is no danger of air still remaining in the apparatus. If there is an explosion, repeat the experiment, till it inflames without any noise.

Inquirer.—The letters 'S. G. D. G.," which are always connected with French Patents, stand for *Sans Garantie du Gouvernement*, "not guaranteed by the Government." The French law requires these letters to be attached in all cases. Our correspondent must not assume that other governments, which do not insist on such a caution, are therefore to be held responsible for all the strange ideas patented within their realms.

Latex.—A set of diagrams representing structural botany is published by Reynolds, of the Strand, which would probably answer your purpose.

F. G.—Ruspini's tincture for the teeth is made thus :—

Orris Root 8 oz.
Cloves 1 oz.
Rectified Spirit 2 pints.
Ambergris 1 scruple.

The Plethora of Wealth.—*S. V. R.*, who is possibly a sufferer, writes :—the Pharmaceutical Society is suffering from that sad affliction of money on the brain, I should recommend it to return the whole fee (instead of half) to the unsuccessful candidates, and not pluck them the first time they present themselves, for the express purpose of increasing their funds, when they are already ov r-flowing.

W. A.—*Essence of Rennet.*—Fresh rennet (cut small), 12 oz.; common salt, 3 oz.; knead together and set aside in a cool place for six weeks; then add, water, 18 oz.; proof spirit, 2 oz.; digest for 24 hours, filter, and colour with burnt sugar if desirable. ʒj. is sufficient to curdle a quart of milk. Rennet is the inner stomach of the calf, free from fat, skin, &c., and well washed.

Ders.—To separate gold from its solution in nitro-muriatic acid, ev rate the solution over a water-bath till acid vapours are no longer exhale dissolve the residue in water acidulated with hydrochloric acid; add pr sulphate of iron, which will completely precipitate the gold in the form a brown or brownish-yellow powder, the protosulphate of iron be sesqui-sulphate and sesqui-chloride. The gold thus precipitated is q devoid of metallic lustre, which may be produced by burnishing precipi of gold after standing on a shelf at about 60° temperature for three or weeks.

Mr. B. K. EARNSHAW, Eastbourne, writes—Will some one give me address of a Mrs. Weston? She was lately at Brighton, living with father, Mr. Manning, and a little girl of about 12 or 14 years of age. Manning is connected with the A. B. C. Sewage Works.

Pharmacien.—It is doubtful whether the announcement would be st legal, but there never has been, and probably never will be, any at to challenge it.

Harry.—Easton's Syrup is, Syr. ferri phosph. of the B. P., cont also in each fluid drachm 1 grain phosphate of quinine, and $\frac{1}{3}$. gr strychnine.

O. W. (Janesville, Wis., U.S.)—It seems to us that a prescription belon by right to the person who has paid for it. This right is universally reco nized in this country, by custom. We are not aware that the questi ever been raised legally. In Germany it is the custom for the chemist keep it. You say that, in America, physicians, patients, and chemists claim it. It is reported here that certain of your countrymen are ingenious in discovering "indirect claims." Eau de Cologne may be manufactured—Ol. Neroli, ʒj.; Rosmar., ♏xlv.; Cassia, ♏x.; Lemon, Bergamot, ʒij.; S.V.R., Oij. You can cheapen this at discretion. Mes Fry, of Brighton, have published a photographic group of English macists, price about 6*s.*

Mr. C. Andrews, of Pembroke Dock, writes as follows :—In answe "Inquirer," in your "Notes and Queries" column, I can strongly recomm a small shilling manual, entitled "Tooth Extraction," with a very table, by John Gorham, M.R.C.S. Lond., of Tunbridge, published by Hardwicke, 192 Piccadilly, W. Messrs. C. Ash & Sons, of Broad S Golden Square, W., would forward "Inquirer" a copy, post free, f stamps. The information the manual contains is very condensed, arranged in such a clear manner as to render it a most handy work of rence for a young beginner.

In answer to "B."—The following syrups I have used for some yea have found them satisfactory :—

For Lemonade :—
3 oz. Tartaric Acid, $\frac{1}{2}$ oz. Ol. Limon., 19 pints (O.M. 16 oz. to Simple Syrup: Put 1 oz. in each bottle and fill up with water from the machine in the usual way.

For Gingerade :—
Tinct. Zingib. Fortior., ℥ij. ʒij.; Ess. Limon., ♏xxvi.; S.V.R Tr. Capsici, ʒj. ♏xij.; Ac. Tartaric, ʒiij. Simple Sy pints impl. and ℥xij. (72 fl. oz.) ʒj. to each bottle. The is sufficient for 6 doz.

J. M.—We cannot tell you the formula for Trommer's Malt E Perhaps some reader can. Meanwhile we offer you the German P copœia form for "Maizextrakt :"—

Take of barley malt, bruised, and common water, each, one part set aside for three hours, then add of common water four parts. D for an hour, at a temperature not exceeding 65° C.; then heat the ma the boiling point, and strain immediately by expression. Evapora clear liquid as rapidly as possible, stirring constantly, to the consis a thick extract. Extract of malt is yellowish-brown, having an agre sweet taste. It should be preserved in a cool place.

Various correspondents ask for formulæ for the following, which we in the hope that general wisdom will atone for edit rial deficiencies.

PLOUGHMAN'S DROPS.
A GOOD TEETHING POWDER.
BLAIR'S PILLS.
SHOEMAKERS' INK.
A GOOD TAMARIND COUGH ELIXIR.

J. W. M.—We regret that we must decline your communication. fectly satisfactory explanation has been given of the reason for qu candidates for the pharmaceutical examinations as to their trai for the sake of statistics, which will one day be valuable, we practice will not be discontinued. To your mind "this may be an able transaction, but it looks very suspicious." Shakespeare wrote thing about suspicions such as yours, which please hunt out, an when found, make a note of.

A. D. asks some of our readers to give him a formula for "non-m plate powder." Whatever may be added for the purp se of disgu colour, nothing can be superior to prepared chalk of the best qual silver goods. The manner of application is a very imp rtant point. It be rubbed on gently, but continuously, with very soft chamois leat damp state. The plate should first be thoroughly washed.